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August 6, 2018

Via ECFS

Ms. Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Re: Petition of USTelecom for Forbearance Pursuant to 47 U.S.C. § 160(c) to Accelerate Investment in Broadband and Next-Generation Networks, WC Docket No. 18-141

Dear Ms. Dortch:

Attached is the Redacted version of the Comments of Verizon in the above-captioned matter. Verizon is filing the Confidential version of these Comments under separate cover.

Thank you for your assistance in this matter. Please contact me at (202) 515-2179 if you have any questions regarding this filing.

Sincerely,

A handwritten signature in black ink, appearing to read "Curtis Groves".

Attachment

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of)	
)	
Petition of USTelecom for Forbearance)	WC Docket No. 18-141
Pursuant to 47 U.S.C. § 160(c) to)	
Accelerate Investment in Broadband and)	
Next-Generation Networks)	

COMMENTS OF VERIZON

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August 6, 2018

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INTRODUCTION AND SUMMARY¹

Congress conceived the unbundling, resale, and long-distance provisions of the Telecommunications Act of 1996 (“1996 Act” or “Act”)² as transitional mechanisms to foster competition in wireline local and long-distance voice markets.³ It expected that, once competition for these services matured, these regulations would become unnecessary. Congress accordingly adopted the forbearance mechanism in the 1996 Act, which requires the Commission to eliminate these regulations once they are no longer necessary to protect consumers. That time has come.

Since 1996, the telecommunications marketplace has transformed beyond recognition. Consumers no longer distinguish between local and long-distance for their wireline voice services—which were the focus of the Act and comprised roughly 75 percent of industry revenues in 1996—and today these services account for only approximately 16 percent of industry revenues. Wireless and broadband providers are now the predominant suppliers of voice services, and they also enable a wide variety of text, messaging, chatting, and other services that have supplanted voice as the primary mode of communications.

As the Commission has found, wireless and broadband services are competitive, and this competition does not rely on the Act’s unbundling, resale, or long-distance provisions.

Eliminating these regulations would not harm the facilities-based competition that provides

¹ The Verizon companies participating in this filing are the regulated, wholly owned subsidiaries of Verizon Communications Inc.

² Pub. L. No. 104-104, 110 Stat. 56 (1996).

³ Unless otherwise noted, references to the “resale” provisions of the 1996 Act mean only the ILEC-specific resale provisions of 47 U.S.C. § 251(c)(4), not § 251(b)(1).

consumers with just and reasonable prices for the services they demand. To the contrary, getting rid of regulations that no longer serve a useful purpose will further enhance competition and benefit consumers and the economy at large.

Although some competitors continue today to rely on unbundled network elements (“UNEs”), they purchase them mostly to provide voice and data services to business customers. And the Commission has recognized that the business data services market is subject to “substantial and growing competition” with “a large number of firms building fiber and competing for this business.”⁴ The Commission has likewise recognized that DS1 and DS3 UNEs use technology that “is becoming obsolete.”⁵ Indeed, the use of UNEs is steadily declining.

Eliminating UNEs poses no risk to consumers, competition, or the public interest. Competitors can deploy their own facilities. And Verizon and other incumbent local exchange carriers (“ILECs” or “incumbent LECs”) will continue to make available regulated and commercial wholesale offerings, as will other facilities-based providers. Verizon itself relies extensively on those offerings, both in connection with its wireless business and for its large competitive local exchange carrier (“CLEC”) entities that operate outside Verizon’s ILEC territory. Verizon relies not only on other ILECs but also on cable operators and other competitive providers, and it is precisely because of these competitive choices that ILECs will have incentives going forward to continue to provide wholesale access to their networks.

⁴ Report and Order, *Business Data Services in an Internet Protocol Environment*, 32 FCC Rcd 3459, ¶¶ 1-2 (2017) (“*Business Data Services Order*”).

⁵ *Id.* ¶ 3.

Further, as customer demand shifts to higher-speed services, which are IP-based, legacy TDM-based services like DS1s and DS3s will continue to decline.

Eliminating UNEs likely will result in substantial consumer benefits. As the attached declaration by Dr. Andres Lerner demonstrates, it is uneconomic to regulate a market once it has grown substantially competitive. That is particularly true where, as here, these regulations apply asymmetrically to different providers in the marketplace. Although Verizon and other ILECs remain subject to unbundling mandates, cable companies face no comparable regulation, even though cable companies have their own incumbent networks and have served business customers for decades. As the Commission has repeatedly recognized, the lack of regulatory parity in situations such as this distorts the marketplace and undermines the very objectives Congress intended the 1996 Act to promote.

Although there will be carriers that oppose forbearance to preserve UNEs for as long as possible, these companies are stuck in the past, while Verizon and others are looking to move the marketplace forward. UNEs do not promote or encourage the fiber deployment that 5G and other new technologies and emerging platforms need. To the contrary, retaining an unnecessary and uneven regulatory structure creates disincentives to move to new technologies and distorts investment decisions. Congress in 1996 intended precisely the opposite.

Pleas that unbundling regulation is necessary to ensure facilities-based competition are unfounded. For example, while commenters made similar claims about the UNE-Platform and line sharing for DSL, in both cases facilities-based competition thrived after the Commission curtailed regulated access to ILEC networks. And here even greater cause for optimism exists,

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because facilities-based competition is already further developed than it was in those earlier instances.

USTelecom and some of the largest buyers and sellers of UNEs have also agreed on a transition plan that further ensures that eliminating unbundling regulation will not harm customers' ability to obtain the communications services they desire. That plan was forged by major suppliers and purchasers of unbundled elements, including Windstream, and gives the industry several years to adjust to the new landscape. The Commission should adopt that plan, which further ensures that forbearance from unbundling regulation will serve the public interest.

For these reasons, the Commission should act promptly to approve the petition of USTelecom—The Broadband Association⁶ to forbear from Section 251(c) unbundling and resale requirements and related obligations.

I. CONGRESS CREATED THE FORBEARANCE STANDARD TO REMOVE THE ILEC-SPECIFIC PROVISIONS OF THE 1996 ACT WHEN THE MARKETPLACE BECAME COMPETITIVE

The “[t]hree principal goals the telephony provisions of the 1996 Act established are: “(1) opening the local exchange and exchange access markets to competitive entry; (2) promoting increased competition in telecommunications markets that are already open to competition, including the long distance services market,” and, though not relevant here, “(3) reforming our system of universal service.”⁷ To fulfill these goals, Congress imposed

⁶ Petition for Forbearance of USTelecom—The Broadband Association, *Petition of USTelecom for Forbearance Pursuant to 47 U.S.C. § 160(c) to Accelerate Investment in Broadband and Next-Generation Networks*, WC Docket No. 18-141 (FCC filed May 4, 2018) (“Petition” or “USTelecom’s Petition”).

⁷ First Report and Order, *Implementation in the Local Competition Provisions of the Telecommunications Act of 1996*, 11 FCC Rcd 15499, ¶ 3 (1996) (“*Local Competition Order*”),

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transitional market-opening obligations on ILECs, including the unbundling and resale requirements of Section 251, and the long-distance provisions of Sections 271 and 272.⁸

Although these provisions were intended to “jump-start” competition,⁹ Congress recognized they would come with a heavy cost, and not just to ILECs’ bottom-line.¹⁰ Congress recognized that these provisions could restrain development of new technologies that facilities-based competition otherwise would spawn.¹¹ Accordingly, Congress designed the requirements to be temporary, directing the Commission to adjust or eliminate the regulations when competition developed and market conditions evolved.¹²

modified on recon., 11 FCC Rcd 13042 (1996), *vacated in part*, *Iowa Utils. Bd. v. FCC*, 120 F.3d 753 (8th Cir. 1997), *aff’d in part, rev’d in part sub nom. AT&T Corp. v. Iowa Utils. Bd.*, 525 U.S. 366 (1999), *decision on remand*, *Iowa Utils. Bd. v. FCC*, 219 F.3d 744 (8th Cir. 2000), *aff’d in part, rev’d in part sub nom. Verizon Communications Inc. v. FCC*, 535 U.S. 467 (2002).

⁸ See *Local Competition Order* ¶ 4. See also Memorandum Opinion and Order, *Petition of Qwest Corporation for Forbearance Pursuant to 47 U.S.C. § 160(c) in the Phoenix, Arizona Metropolitan Statistical Area*, 25 FCC Rcd 8622, ¶ 90 (2010) (“*Qwest Phoenix Order*”) (“Congress enacted and the Commission implemented the UNE framework in an attempt to lower barriers to entry and to create a viable platform for entry into the local market.”).

⁹ 141 Cong. Rec. 15,572 (1995) (remarks of Sen. John Breaux (La.) on the legislation that became the 1996 Act).

¹⁰ See *Verizon Communications Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 410 (2004) (“The unbundled elements offered pursuant to § 251(c)(3) exist only deep within the bowels of Verizon; they are brought out on compulsion of the 1996 Act and offered not to consumers but to rivals, and at considerable expense and effort.”).

¹¹ See, e.g., *United States Telecom Ass’n v. FCC*, 290 F.3d 415, 429 (D.C. Cir. 2002) (“[M]andatory unbundling comes at a cost, including disincentives to research and development by both ILECs and CLECs and the tangled management inherent in shared use of a common resource.”) (citing *AT&T Corp. v. Iowa Utils. Bd.*, 525 U.S. 366, 428-29 (1999) (Breyer, J., concurring in part and dissenting in part)).

¹² See *Qwest Phoenix Order* ¶ 4 (“[I]n passing the 1996 Act, Congress, *inter alia*, sought to introduce competition into local telecommunications markets and to facilitate increased competition in telecommunications markets already subject to competition, while at the same time directing the Commission to adjust or eliminate regulations as competition developed and

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To ensure the regulations would last only so long as necessary, Congress enacted Section 10 of the Communications Act of 1934,¹³ which requires the Commission to forbear from enforcing regulations when certain criteria are met.¹⁴ Under this section, the Commission recently refrained from enforcing provisions of the 1996 Act that were similarly aimed at opening the local voice services market to competition. In doing so, the Commission observed it was furthering its “commitment to eliminate burdens on industry and promote innovation while ensuring [its] statutory objectives are met”¹⁵ and “relieving carriers from having to focus

market conditions evolved.”); Order on Remand, *Unbundled Access to Network Elements*, 20 FCC Rcd 2533, ¶ 3 (2005) (“*Triennial Review Remand Order*”) (“Our unbundling rules are designed to remove unbundling obligations over time as carriers deploy their own networks and downstream local exchange markets exhibit the same robust competition that characterizes the long distance and wireless markets.”), *petitions for review denied*, *Covad Communications Co. v. FCC*, 450 F.3d 528 (D.C. Cir. 2006); Third Report and Order and Fourth Further Notice of Proposed Rulemaking, *Implementation of the Local Competition Provisions of the Telecommunications Act of 1996*, 15 FCC Rcd 3696, ¶ 7 (1999) (“*UNE Remand Order*”) (“Unbundling rules that encourage competitors to deploy their own facilities in the long run will provide incentives for both incumbents and competitors to invest and innovate, and will allow the Commission and the states to reduce regulation once effective facilities-based competition develops.”), *vacated and remanded*, *United States Telecom Ass’n v. FCC*, 290 F.3d 415 (D.C. Cir. 2002).

¹³ 47 U.S.C. § 160.

¹⁴ See also Notice of Inquiry, *Framework for Broadband Internet Service*, 25 FCC Rcd 7866, ¶ 69 (2010) (“In recognition of the need to tailor the Commission’s policies to evolving markets and technologies, Congress gave the Commission in 1996 the authority and responsibility to forbear from applying provisions of the Communications Act when certain criteria are met, and specifically directed the Commission to use this new power to ‘encourage the deployment on a reasonable and timely basis of advanced telecommunications capability to all Americans.’”) (quoting 47 U.S.C. § 1302(a)) (footnote omitted).

¹⁵ Memorandum Opinion and Order and Report and Order and Further Notice of Proposed Rulemaking and Second Further Notice of Proposed Rulemaking, *Petition of USTelecom for Forbearance Under 47 U.S.C. § 160(c) from Enforcement of Certain Legacy Telecommunications Regulations*, 28 FCC Rcd 7627, ¶ 2 (2013) (“*2013 USTelecom Forbearance Order*”).

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resources on complying with outdated legacy regulations that were based on technological and market conditions that differ from today.”¹⁶

The regulations at issue here are similarly outdated, conceived to encourage competition in a market that has since transformed beyond recognition. In fact, more than a dozen years ago in the *Triennial Review Remand Order*, the Commission curtailed UNE use for wireless and long-distance services based on the emergence of facilities-based competition that did not rely on UNEs, and it recognized that “such conclusions might someday be appropriate” for the local exchange market as well, particularly as competition from cable developed.¹⁷

Since then, competitive offerings throughout the nation have increased exponentially. Changes that one could have hardly imagined then—such as the 500-percent increase in the share of households relying exclusively on wireless services¹⁸ and the widespread proliferation and adoption of cable broadband and voice services—have increased competition dramatically throughout the country, to consumers’ advantage. It is time for the Commission to reach the

¹⁶ Memorandum Opinion and Order, *Petition of USTelecom for Forbearance Pursuant to 47 U.S.C. § 160(c) from Enforcement of Obsolete ILEC Legacy Regulations That Inhibit Deployment of Next-Generation Networks*, 31 FCC Rcd 6157, ¶ 2 (2015) (“*2015 USTelecom Forbearance Order*”).

¹⁷ *Triennial Review Remand Order* ¶¶ 38-39 & n.116. See also Memorandum Opinion and Order, *Petition of Qwest Corporation for Forbearance Pursuant to 47 U.S.C. § 160(c) in the Omaha Metropolitan Statistical Area*, 20 FCC Rcd 19415, ¶ 63 (2005) (“*Omaha Forbearance Order*”) (“In the *Triennial Review Remand Order*, . . . the Commission announced that it might one day be appropriate to conclude, based upon sufficient facilities-based competition, particularly from cable companies, that the state of local exchange competition might justify forbearance from UNE obligations. Today, that expectation is realized.”) (footnote omitted).

¹⁸ See Petition at 9, Chart 2 (showing an increase in wireless-only households from 10 percent of U.S. households in 2005, to 60 percent estimated for 2018).

conclusion it anticipated more than a decade ago—these requirements are unnecessary, have outlived their usefulness, and must be retired.

II. THE RELEVANT MARKETPLACES HAVE CHANGED DRAMATICALLY SINCE 1996

Competition in the telecommunications sector has increased in ways that the 1996 Act’s drafters could not have envisioned. Business data services are highly competitive—as the Commission recently found—and do not require unbundling to stay that way. In the consumer marketplace, the distinction between wireline local and long-distance voice services eroded long ago,¹⁹ and wireline voice services themselves have collapsed into a larger marketplace for communications that includes a wide range of technologies and providers. These services today are intensely competitive, and this competition does not rely to any meaningful extent on the unbundling, ILEC-specific resale, or long-distance provisions of the Act.

A. The Primary Market That UNEs and ILEC-Specific Resale Marginally Affect Is the Business Data Services Market, Which the Commission Just Concluded Is Competitive

Most competitors that continue to rely on UNEs do so to provide data services to business customers. But the Commission has recognized that the business data services market is subject to “substantial and growing competition” with “a large number of firms building fiber and competing for this business.”²⁰ The Commission has likewise recognized that DS1s and

¹⁹ See, e.g., *2015 USTelecom Forbearance Order* ¶ 49 (“Almost a decade ago, the Commission identified stand-alone long-distance as a ‘fringe’ market for mass market services. The record reflects that the trend toward all-distance voice services has continued since that time.”) (footnote omitted); *id.* ¶ 50 (noting “the current popularity of all-distance service and bundling options”).

²⁰ *Business Data Services Order* ¶¶ 1-2.

DS3s use technology that “is becoming obsolete.”²¹ And, as explained below, eliminating UNEs for business customers poses no risk to competition, both because competitors are able to deploy their own facilities and will continue to offer wholesale services, and because ILECs will continue to offer wholesale services, including regulated DS1 and DS3 services.

The demand for DS0s—which for Verizon accounts for approximately [BEGIN CONFIDENTIAL] [END CONFIDENTIAL] percent of UNEs sold—has also declined. Businesses are demanding higher-speed Ethernet, better service, and service guarantees.²² Fiber can provide these reliable high-bandwidth services.²³ Because of this shift in demand, a wide range of competitor providers have expanded their fiber networks.²⁴ And like its competitors, Verizon is investing in fiber to meet this demand.

Competition in the business data services marketplace has grown substantially since 1996. As the Commission explained just last year, “[a]lthough incumbent LECs once dominated the business data services market selling circuit-based DS1s and DS3s, that technology is becoming obsolete” because “rapidly increasing bandwidth demands will place an ever increasing demand for services such as Ethernet, especially over fiber, which can scale

²¹ *Id.* ¶ 3. See also *id.* ¶ 132 n.401 (noting that UNEs are “declining in the market as incumbent LECs transition their circuit-switched to packet-based business data services”).

²² See *Verizon-XO Transaction: Whitepaper on the Effect of Verizon’s XO Acquisition on Business Data Services*, at 16 (Aug. 1, 2017) (attached to Letter from Katharine R. Saunders, Verizon, to Marlene H. Dortch, FCC, WC Docket No. 16-70 (Aug. 26, 2016)) (“Demand for Business Data Services at these low speeds (50 Mbps and below) is projected to continue to drop sharply (approximately 20% per year from 2014 to 2019), while demand for higher speeds is expected to grow significantly (29.1% growth rates for 1 to 100 Gbps from 2014 to 2019).”).

²³ *Id.* at 8, 16.

²⁴ *Id.* at 10-11.

bandwidth to meet these requirements more effectively.”²⁵ As a result, the business data services marketplace is now fraught with “intense competition.”²⁶ According to the Commission’s data collection from 2015, nearly 500 facilities-based companies provide business data services.²⁷ “Competitive LECs such as Zayo and Birch continue to invest and expand their competitive fiber networks with very successful results.”²⁸ And the entry of cable companies—“formidable competitors”²⁹—has been “the most dramatic change in the market over the past decade.”³⁰ Since the Commission’s data collection, this competition has continued to intensify.

Competition is fierce, from both old players and new powerful ones. Competitive LECs earned \$23 billion of the \$45 billion in business data services revenue in 2013.³¹ As the Commission explained, “[n]on-cable competitive LECs and other non-traditional providers” are growing and perpetually expanding their reach.³² For example, Zayo, which was founded in 2007, already operates a fiber network in 46 States and the District of Columbia.³³ It now has “more than 25,000 buildings connected to its metro fiber network,”³⁴ and for the quarter ending

²⁵ *Business Data Services Order* ¶ 3.

²⁶ *Id.* ¶ 1.

²⁷ *Id.* ¶ 2.

²⁸ *Id.*

²⁹ *Id.*

³⁰ *Id.* ¶ 55.

³¹ *See id.* ¶ 2.

³² *Id.* ¶ 63.

³³ *See* Zayo Group, Building Lists & KMZ Files, <https://www.zayo.com/solutions/global-network/building-lists-kmz-files/>.

³⁴ *Business Data Services Order* ¶ 63.

March 31, 2018, it reported \$649.4 million of consolidated revenue.³⁵ As Zayo has noted, it will continue to invest in and expand its fiber networks.³⁶

Competition from cable companies has emerged at an even more staggering clip. As the Commission recently found, “[c]able business data services are reported to have grown at approximately 20 percent annually for the past several years and, increasingly, they have emphasized Internet access and managed services, which directly compete with the products being offered by [LECs].”³⁷ These companies “now offer over fiber carrier-grade reliability, scalability, and quality of service functionality to compete for the largest enterprise customers across the country.”³⁸ Their “focused investment on building fiber networks for higher-bandwidth Ethernet services . . . is enabling them to overcome limitations of traditional coaxial-based cable systems that cannot meet higher bandwidth demands.”³⁹ According to International Data Corporation (“IDC”), Comcast is the second largest provider (behind AT&T) for small- and medium-sized business customers, accounting for approximately 12.5 percent of revenues in 2016.⁴⁰ Comcast, Charter, and other cable providers experienced a year-over-year growth in

³⁵ See Zayo Group News Release, *Zayo Group Holdings, Inc. Reports Financial Results for the Third Fiscal Quarter Ended March 31, 2018* (May 3, 2018), <http://investors.zayo.com/~media/Files/Z/Zayo-IR-V2/earnings-releases/2018/fy-2018-q3-earnings-release.pdf>.

³⁶ See Zayo Group, *Earnings Call Presentation: Fiscal Year 2018 Q3*, at slide 23 (May 3, 2018) (“Further investment in Fiber Business Development”), <http://investors.zayo.com/~media/Files/Z/Zayo-IR-V2/earnings-releases/2018/fy-2018-q3-earnings-presentation.pdf>.

³⁷ *Business Data Services Order* ¶ 2.

³⁸ *Id.* ¶ 55.

³⁹ *Id.* ¶ 57.

⁴⁰ See Jason Blackwell, IDC, *U.S. SMB Telecom Voice and Data Market Shares, 2016: Cable Putting Pressure on Telcos*, IDC #US42561817, at 1, Fig. 1, & 3, Table 1 (May 2017).

revenues for this segment of 15.9 percent, 7.6 percent, and 3.7 percent, respectively, while AT&T, Verizon, CenturyLink, and other telcos experienced declines of 2.8 percent, 13.3 percent, 0.9 percent, and 3.3 percent, respectively.⁴¹ In the enterprise space, the nation’s largest cable operators—Spectrum and Comcast—are now the fourth and fifth largest providers of Ethernet services in the United States, respectively.⁴²

On the whole, the packet-based services non-ILEC competitors offer “represent the future of business data services and are readily scalable.”⁴³ As the Commission explained, the “higher bandwidth capabilities of these services will lead to greater returns on investment and in turn, greater incentives for facilities-based entry into the business data services market,” spurring continued competition that is “sufficient enough to discipline pricing.”⁴⁴ In fact, Verizon purchases from cable operators and other competitive providers for its large CLEC entities that operate outside Verizon’s ILEC territory. In line with its aim to buy the most efficient and cost-effective access available, it buys business data services from major cable companies for its CLEC businesses as well as its mobile backhaul.⁴⁵ As the Commission noted in its *Business*

⁴¹ See *id.* at 1, Fig. 1.

⁴² See Vertical Systems Group, *2017 U.S. Carrier Ethernet LEADERBOARD* (Feb. 22, 2018), <https://www.verticalsystems.com/2018/02/21/2017-u-s-carrier-ethernet-leaderboard/>.

⁴³ *Business Data Services Order* ¶ 88.

⁴⁴ *Id.* ¶ 83.

⁴⁵ See, e.g., Letter from Curtis L. Groves, Verizon, to Marlene H. Dortch, Secretary, FCC, WC Docket Nos. 16-143 & 05-25, RM-10593 (Aug. 5, 2016) (“Verizon buys Business Data Services as wholesale inputs to Verizon’s retail services and for backhaul to its cell sites.”); Letter from Maggie McCreedy, Verizon, to Marlene H. Dortch, Secretary, FCC, WC Docket Nos. 15-247 & 05-25, RM-10593, at 5-6 & Attach. A, Declaration of Brendan Gunn and Daniel Higgins ¶ 17 (Mar. 1, 2016) (describing Verizon’s position as a wholesale customer).

Data Services Order, Verizon is not alone: AT&T “has certified both fiber-based and HFC-based Ethernet offerings from cable companies for use in [its business data] services, as well as for use in [its] backhaul services,”⁴⁶ and Sprint has similarly announced that it “provides business data services over cable company facilities, including EoHFC.”⁴⁷

The growth in these new offerings has made the business data services marketplace broadly competitive. As AT&T noted in the business data services proceeding, “as of 2013, competitive providers have deployed competing transport networks in more than 95% of census blocks with special access demand (and about 99% of business establishments are in these MSAs).”⁴⁸ The Commission agreed that “the vast majority of locations with special access demand have competitive fiber within close proximity”⁴⁹ and that regulation of TDM transport is “not justified.”⁵⁰ The Commission similarly found that most “locations with special access demand” were subject to competition and could thus be deregulated.⁵¹

The business data services market is not just competitive; offerings relying on Ethernet are displacing the TDM technologies that are used for UNEs. In fact, the Commission cited data

⁴⁶ *Business Data Services Order* ¶ 28 (citing Letter from Christopher T. Shenk, Counsel to AT&T Inc., to Marlene H. Dortch, Secretary, FCC, WC Docket No. 05-25, at 7 (Mar. 21, 2016)) (alterations in original).

⁴⁷ *Business Data Services Order* ¶ 28 (citing Sprint Press Release, *Sprint Adds Ethernet over Copper and DOCSIS* (Jan. 3, 2017), <http://newsroom.sprint.com/news-releases/sprint-adds-ethernet-over-copper-and-docsis.htm>).

⁴⁸ Letter from James P. Young, Sidley Austin LLP, Counsel to AT&T Inc., to Marlene H. Dortch, Secretary, FCC, WC Docket Nos. 16-143, 15-247 & 05-25, RM-10593, at 4 (Oct. 25, 2016).

⁴⁹ *Business Data Services Order* ¶ 79.

⁵⁰ *Id.*

⁵¹ *Id.* ¶ 142.

showing that “the migration from TDM to Ethernet business data services is fueling double-digit revenue growth for Ethernet business data services, and that this growth rate is expected to increase as Ethernet networks expand.”⁵² Specifically, the Commission noted: “Ethernet-based services accounted for more than 40 percent of total dedicated service revenues in 2013, and Ethernet business data services revenues have been growing by over 20 percent a year since then.”⁵³ This transition has escalated in the year since the Commission issued the *Business Data Services Order*, and the Commission has observed it will result in “the eventual termination of TDM service offerings altogether.”⁵⁴

Ultimately, the competitive dynamic Congress hoped to achieve by enacting the unbundling, resale, and long-distance provisions was surpassed long ago. Today, customers can select from a diverse range of competitive offerings in a marketplace that bears no resemblance to the one Congress faced when it passed the 1996 Act, and the companies that take advantage of these regulations do so in a market that the Commission concluded is competitive, where ILECs’ market share and technology are being overtaken at a staggering rate.

B. Voice Services Are Fiercely Competitive, and This Competition Does Not Rely on the Unbundling, Resale, or Long-Distance Provisions of the Act

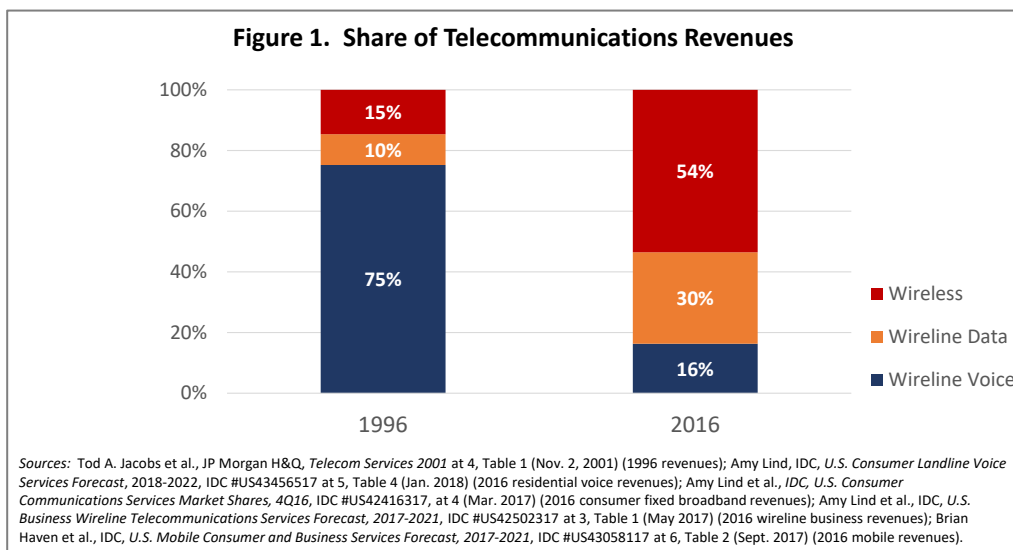
In 1996, nearly all consumers received local voice services through ILEC wireline networks, and long-distance services were primarily accessed through these networks. The 1996 Act’s main concern therefore was promoting competition for wireline local and long-distance

⁵² *Id.* ¶ 68.

⁵³ *Id.*

⁵⁴ *Id.* ¶ 25.

voice services. Today, however, consumers have innumerable ways to communicate besides voice, and they receive these services from a wide range of competitive providers. As a result, wireline voice services have declined from roughly 75 percent of industry revenues in 1996, to roughly 16 percent today.⁵⁵ See Fig. 1. And wireline switched telephone lines in service have declined from a peak of 186 million in the year 2000, to 49 million in 2016, to a projected 35 million by the end of 2018.⁵⁶ There is no bottleneck.



⁵⁵ See, e.g., Tod A. Jacobs et al., JP Morgan H&Q, *Telecom Services 2001*, at 4, Table 1 (Nov. 2, 2001) (1996 revenues); Amy Lind, IDC, *U.S. Consumer Landline Voice Services Forecast, 2018-2022*, IDC #US43456517, at 5, Table 4 (Jan. 2018) (2016 residential voice revenues); Amy Lind et al., IDC, *U.S. Consumer Communications Services Market Shares, 4Q16: Video Maintains Revenue Growth Amid Share Shift*, IDC #US42416317, at 4 (Mar. 2017) (2016 consumer fixed broadband revenues); Amy Lind et al., IDC, *U.S. Business Wireline Telecommunications Services Forecast, 2017-2021*, IDC #US42502317, at 3, Table 1 (May 2017) (2016 wireline business revenues); Brian Haven et al., IDC, *U.S. Mobile Consumer and Business Services Forecast, 2017-2021*, IDC #US43058117, at 6, Table 2 (Sept. 2017) (2016 mobile revenues).

⁵⁶ See Petition at 7-8 & Chart 1.

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Bundled, multifunctional, broadband offerings have replaced the formerly separate markets for local and long-distance wireline voice services.⁵⁷ Consumers can and do get these offerings not just (or even predominantly) through ILECs,⁵⁸ but through myriad companies offering innovative services Congress could barely have imagined in 1996. In 1996, fewer than two percent of U.S. telephone households relied exclusively on wireless service.⁵⁹ By the end of

⁵⁷ See Ind. Anal. & Tech. Div., Wireline Comp. Bur., FCC, *Voice Telephone Services: Status as of December 31, 2016*, at 6, Fig. 4 (Feb. 2018) (“*FCC Dec. 2016 Voice Telephone Services Report*”) (indicating that only 40 percent of wireline voice connections as of December 31, 2016, were voice only). See also Twentieth Report, *Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993; Annual Report and Analysis of Competitive Market Conditions With Respect to Mobile Wireless, Including Commercial Mobile Services*, 32 FCC Rcd 8968, ¶ 20 & n.68 (2017) (“*Twentieth Wireless Competition Report*”) (data reported by CTIA showed a five-percent decline in annual minutes of voice use in 2016, but a 39-percent increase in monthly data usage per smartphone subscriber); *Twentieth Wireless Competition Report*, Statement of Commissioner Michael O’Rielly (The Commission’s most recent mobile wireless report “provides a glimpse into industry trends For instance, while data usage is increasing, the annual voice minutes and the use of traditional SMS text messaging are decreasing. Many of the legacy wireless cellphone functions are being overtaken by Internet apps, such as Skype, FaceTime, WhatsApp and Facebook messenger.”); Nineteenth Report, *Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993; Annual Report and Analysis of Competitive Market Conditions With Respect to Mobile Wireless, Including Commercial Mobile Services*, 31 FCC Rcd 10534, ¶ 2 (2016) (“*Nineteenth Wireless Competition Report*”) (“[c]onsumers view various mobile voice, messaging, and data services as interchangeable with one another, and as a result, it is important to consider potential substitutes when analyzing the competitive landscape for these services, and to evaluate the mobile wireless industry as a whole”).

⁵⁸ See, e.g., Declaratory Ruling, Second Report and Order, and Order on Reconsideration, *Technology Transitions; USTelecom Petition for Declaratory Ruling That Incumbent Local Exchange Carriers Are Non-Dominant in the Provision of Switched Access Services*, 31 FCC Rcd 8283, ¶ 16 (2016) (“[D]emand for this service continues to plummet as subscribership to traditional voice phone service reaches new lows.”).

⁵⁹ See Fifth Report, *Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993; Annual Report and Analysis of Competitive Market Conditions With Respect to Commercial Mobile Services*, 15 FCC Rcd 17660, 17673-74 (2000) (citing a September 1999 study survey finding that “2 percent of respondents indicated that their mobile phone functions as their only phone”).

2018, approximately 60 percent of telephone households will have abandoned wireline service,⁶⁰ and there will be approximately three times as many wireless connections as wired voice connections in the country.⁶¹

Of the minority of customers that continue to maintain a landline voice service, most receive that service from a non-ILEC.⁶² In fact, 62 percent of residential consumers receiving wireline voice services (including from ILECs) do so through interconnected VoIP—a service that was largely nonexistent in 1996 and is currently dominated by cable companies.⁶³ And according to the Commission’s own data, more than three-quarters of interconnected residential VoIP connections are supplied by non-ILECs.⁶⁴

Consumers are also now taking advantage of non-voice offerings in the marketplace such as texting, chatting, video calling, and countless other forms of social media communications.⁶⁵

⁶⁰ See Petition at 8.

⁶¹ See Patrick Brogan, USTelecom, *USTelecom Industry Metrics and Trends 2018*, at 9 (Mar. 1, 2018), <https://www.ustelecom.org/sites/default/files/images/USTelecom%20Industry%20Metrics%20and%20Trends%202018.pdf>.

⁶² See Petition at 9.

⁶³ See *FCC Dec. 2016 Voice Telephone Services Report* at 3, Fig. 2 (approximately 40.3 million out of approximately 63.1 million wireline retail voice connections as of December 31, 2016, were interconnected VoIP).

⁶⁴ See *id.* (approximately 30.3 million out of approximately 40.3 million interconnected VoIP connections in the residential market as of December 31, 2016, were provided by non-ILECs). Non-ILECs are even more dominant in the business market, providing 86 percent of interconnected VoIP connections in the market as of December 31, 2016. See *id.*

⁶⁵ See, e.g., Thirteenth Section 706 Report Notice of Inquiry, *Inquiry Concerning Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion*, 32 FCC Rcd 7029, ¶ 7 (2017) (“Mobile applications and websites provide ‘high-quality voice, data, graphics, and video telecommunications,’ including text messaging, e-mail, social networking, and voice recording and viewing to those with a robust enough broadband

Consumers also are increasingly using video-calling applications on their mobile devices.⁶⁶ Last year, Commissioner O’Rielly noted that “wireless providers—not exactly the old guard—are seeing their business models change, as voice and SMS texting revenues decrease due to unregulated WhatsApp, Facebook Messenger, Skype, FaceTime, and others.”⁶⁷ For example, Facebook recently reported that “[b]etween WhatsApp and [Facebook] Messenger people now send almost 100 billion messages every day. They also do more than 3 billion minutes of video and voice calling every day—making us by far the largest network for video calling as well.”⁶⁸ Two years ago, Facebook reported that Facebook Messenger and WhatsApp generated “60 billion messages a day which is something like three times more than the peak of global SMS traffic.”⁶⁹

Smaller business customers, which the Commission has sometimes grouped together with consumers, have similarly shifted to competitive alternatives. According to the Commission’s data, as of year-end 2016, non-ILECs had secured most business and government-grade switched

connection. Mobile devices are used more often to share photographs and videos online, and have also enabled video calling applications.”) (footnotes omitted).

⁶⁶ *See id.*

⁶⁷ *Remarks of FCC Commissioner Michael O’Rielly Before the International Institute of Communications’ International Regulators Forum 2017* (Oct. 10, 2017), <https://docs.fcc.gov/public/attachments/DOC-347143A1.pdf>.

⁶⁸ Facebook, Inc., *First Quarter 2018 Results Conference Call*, Transcript at 3 (Apr. 25, 2018) (statement by Facebook CEO Mark Zuckerberg), https://s21.q4cdn.com/399680738/files/doc_financials/2018/Q1/Q1-18-Earnings-call-transcript.pdf.

⁶⁹ Facebook, Inc., *Second Quarter 2016 Results Conference Call*, Transcript at 14 (July 27, 2016) (statement by Facebook CEO Mark Zuckerberg), https://s21.q4cdn.com/399680738/files/doc_financials/2016/q2/FB-Q216-Earnings-Transcript.pdf.

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access and interconnected VoIP connections.⁷⁰ And non-ILECs are even more dominant in providing business VoIP services than consumer VoIP services, accounting for 86 percent of those connections as of the end of 2016.⁷¹

The intense competition for voice services does not rely to any meaningful extent on the unbundling or ILEC-specific resale provisions of the 1996 Act. According to the Commission's data, from 2005 to 2016, competitor use of unbundled facilities fell by more than half, from 4.5 million UNE loops in use in 2005, to 2.1 million in 2016. As USTelecom notes in its Petition, ILEC-provisioned UNE loops "account for *less than two percent* of all fixed lines and *less than one-half of one percent* of all connections (*i.e.*, including wireless lines)."⁷² And although the Commission's data do not distinguish between business and residential UNE loops, in Verizon's experience few UNE loops remain in the residential sector.

The picture for resale is similar. As USTelecom's Petition shows, from 2010 to 2016 alone, non-ILEC lines provided via resale decreased from 8.6 million to 6.1 million.⁷³ Thus, as of 2016, less than three percent of the total fixed end-user retail connections were on resold ILEC lines.⁷⁴

⁷⁰ See *FCC Dec. 2016 Voice Telephone Services Report* at 3, Fig. 2.

⁷¹ See *id.*

⁷² Petition at 17 (citing data from *FCC Dec. 2016 Voice Telephone Services Report* at 8, Table 1).

⁷³ *Id.* at 18.

⁷⁴ *Id.* at 17.

III. THE CURRENT REGULATIONS ARE UNNECESSARY AND COUNTERPRODUCTIVE

A. Overregulation Harms Competition

The outdated unbundling, resale, and long-distance regulations are not only unnecessary to protect competition, but retaining them threatens to have the opposite effect. Overregulation harms competition by stifling innovation and lessening incentives to invest in economically efficient activity.⁷⁵ The negative effects of overregulation are particularly destructive in the telecommunications sector because of its “unusually high rates and speed of innovation.”⁷⁶ Companies must already bear huge risks when investing in new communications technologies. Imposing additional regulatory restraints “creat[es] disincentives to investment, beyond those risks that are inherent in the marketplace.”⁷⁷

⁷⁵ See, e.g., Andres V. Lerner, *An Economic Analysis of the Impact of Forbearance from 251(c)(3) on Competition and Investments*, ¶ 6 (Aug. 6, 2018), attached as Ex. A (“Lerner Decl.”); *Restoring Internet Freedom*, Declaratory Ruling, Report and Order, and Order, 33 FCC Rcd 311, ¶ 1 (2017) (eliminating “burdensome regulation that stifles innovation and deters investment”); Lawrence Lessig, *Free Culture: How Big Media Uses Technology and the Law to Lock Down Culture and Control Creativity* 199 (2004) (“Overregulation stifles creativity. It smothers innovation. It gives dinosaurs a veto over the future. It wastes the extraordinary opportunity for a democratic creativity that digital technology enables.”), <http://www.free-culture.cc/freeculture.pdf>.

⁷⁶ See Letter from Patrick S. Brogan, USTelecom, to Marlene H. Dortch, Secretary, FCC, GN Docket No. 14-28 (Nov. 19, 2014) (submitting a study, *The Impact of Title II Regulation of Internet Providers on Their Capital Investments*, by Kevin A. Hassett and Robert J. Shapiro, which summarized several studies on this subject), http://ustelecom.org/sites/default/files/documents/ExParte_TitleII_Study_11.19.14_pb.pdf.

⁷⁷ Jennifer A. Manner, *Emerging Communications Technologies: Wireless Developments and Beyond*, 3 J. Telecomm. & High Tech. L. 417, 418-19 (2005); see also Günter Knieps, *Regulatory Unbundling in Telecommunications*, 12 Comp. & Reg. Network Indus. 344, 353-54 (2011) (“A distinction needs to be made between those kinds of networks industries where the monopolistic bottleneck characteristics tend to be relatively stable over time (e.g. electricity grids or rail networks) and dynamic network industries where monopolistic bottleneck characteristics tend to constitute a transitory phenomenon due to the development of technology. The

The Commission has recognized that “[u]tility-style regulation is particularly inapt for a dynamic industry built on technological development and disruption,”⁷⁸ as it “distorts production as well as consumption choices.”⁷⁹ As a result, the Commission has eliminated regulations that “stifle[] innovation and deter[] investment”⁸⁰ and declined to adopt “an approach [that] would result in substantial overregulation of the business data services market.”⁸¹

As Dr. Andres Lerner explains in the attached declaration, economists have routinely found that “regulation of competitive industries (and in which no material ‘market failures’ exist) can harm competition and consumers, and can distort market outcomes.”⁸² Only in limited situations—such as when a natural monopoly exists for a particular good or service—is public-utility regulation likely to promote economic efficiency.⁸³ In competitive markets, by contrast, regulations impose costs on firms and consumers.⁸⁴ And in industries characterized by rapid technological advancement—like the telecommunications sector—such distortions can undermine consumer welfare by imposing costs that outweigh any minimal benefit.⁸⁵ The

telecommunications sector, where extensive phasing-out potential had already been expected with the onset of market liberalization, provides a key example in this respect. In the meantime, the development from narrowband to broadband communications has already significantly shrunk the monopolistic bottleneck areas.”).

⁷⁸ Declaratory Ruling, Report and Order, and Order, *Restoring Internet Freedom*, 33 FCC Rcd 311, ¶ 100 (2017) (“*Restoring Internet Freedom Order*”).

⁷⁹ *Id.*

⁸⁰ *Id.* ¶ 1.

⁸¹ *Business Data Services Order* ¶ 123.

⁸² Lerner Decl. ¶ 6.

⁸³ *Id.* ¶¶ 11-12.

⁸⁴ *Id.* ¶ 14.

⁸⁵ *Id.*

intrusive obligation placed on incumbents here, which forces them to share facilities with competitors or resell them at artificially discounted rates, is particularly anticompetitive. Providers compete effectively by “establishing an infrastructure that renders them uniquely suited to serve their customers.”⁸⁶ The incentives to developing economically beneficial facilities dissipate once firms must “share the source of their advantage.”⁸⁷ As Justice Breyer explained, in more technologically complex industries, the costs associated with forced sharing are larger.⁸⁸

The regulations requiring incumbents to maintain these facilities can discourage investment in new innovative technologies. As Dr. Lerner explains, the “[u]nbundling requirements induce competitive carriers to defer facilities-based investments by increasing the profitability of offering services through UNEs at subsidized, below-market rates, relative to the capital investments necessary to provide facilities-based, next-generation services.”⁸⁹ Further, “[t]he subsidies provided by the unbundling mandates artificially distort the relative price between leasing UNEs in providing legacy services, and leasing other wholesale services at market rates. Thus, despite the cost and performance advantages of next-generation services, the subsidy distorts the incentive of competitive carriers in continuing to offer legacy services based

⁸⁶ *Trinko*, 540 U.S. at 407.

⁸⁷ *Id.*; see also *Iowa Utils. Bd.*, 525 U.S. at 429 (Breyer, J., concurring in part and dissenting in part) (“Increased sharing by itself does not automatically mean increased competition. It is in the *un* shared, not in the shared, portions of the enterprise that meaningful competition would likely emerge. Rules that force firms to share *every* resource or element of a business would create not competition, but pervasive regulation, for the regulators, not the marketplace, would set the relevant terms.”) (emphasis in original).

⁸⁸ *Iowa Utils. Bd.*, 525 U.S. at 429 (Breyer, J., concurring in part and dissenting in part).

⁸⁹ Lerner Decl. ¶ 50.

on UNEs.”⁹⁰ And empirical studies have concluded that less facilities-based investment occurs when UNE prices are lower.⁹¹

B. The Lack of Regulatory Parity Further Distorts the Marketplace

Another problem with the outdated unbundling, resale, and long-distance regulations is that they are applied unevenly. The rules single out ILECs for these intrusive regulations, even though cable operators also have widespread incumbent networks that are being used to provide voice and data services to residential and business customers. This lack of regulatory parity distorts the marketplace.

The Commission has routinely stated that regulatory parity is important to maintaining a competitive marketplace.⁹² Regulatory parity ensures that “business reasons, rather than regulatory distinctions,” inform economic decision making.⁹³ The Commission has used forbearance to ensure regulatory parity, which makes markets more competitive and thereby serves the public interest.⁹⁴ And as Dr. Lerner’s declaration explains, the market distortions that

⁹⁰ *Id.* ¶ 51.

⁹¹ *Id.* ¶ 44; Robert W. Crandall, Jeffrey A. Eisenach & Allan T. Ingraham, *The Long-Run Effects of Copper-Loop Unbundling and the Implications for Fiber*, 37 Telecomm. Pol’y 262, 266 (2013) (“[T]he evidence suggests strongly that unbundling policies have reduced investment in network infrastructure.”).

⁹² *See, e.g., Business Data Services Order* ¶ 157 (describing how “lack of regulatory parity among broadband data services. . . has created barriers to entry and impeded competition”).

⁹³ Report and Order in MB Docket Nos. 12-68, 07-18, 05-192, Further Notice of Proposed Rulemaking in MB Docket No. 12-68, Order on Reconsideration in MB Docket No. 07-29, *Revision of the Commission’s Program Access Rules*, 27 FCC Rcd 12605, ¶ 39 (2012) (granting forbearance so that the market forces determined “whether to deliver programming by satellite or terrestrial means”).

⁹⁴ *See, e.g., Memorandum Opinion and Order, Petition of the Embarq Local Operating Companies for Forbearance Under 47 U.S.C. § 160(c) from Application of Computer Inquiry & Certain Title II Common-Carriage Requirements*, 22 FCC Rcd 19478, ¶ 48 (2007) (explaining

have resulted from these regulations have “artificially [kept] consumers on legacy services” because they “reduce the incentives of both ILECs and competitive providers to invest in next-generation technologies by decreasing the potential profit opportunities from investing in such technologies.”⁹⁵

IV. EACH OF THE FORBEARANCE CONDITIONS IS MET

Section 10 of the Communications Act, 47 U.S.C. § 160, provides that a telecommunications carrier or class of telecommunications carriers may file a petition requesting that the Commission forbear from applying particular Communications Act provisions or Commission rules. The provision’s purpose is “[t]o promote competition and reduce regulation . . . and encourage the rapid deployment of new telecommunications technologies.”⁹⁶ It is designed for those circumstances where “newly competitive conditions” have made “the heavy-handed regulation of incumbent carriers obsolete.”⁹⁷ Section 10 is, as both Congress and the Commission have recognized, “[a]n integral part of the [1996 Act’s] ‘pro-competitive, deregulatory national policy framework.’”⁹⁸

that “[f]orbearing from application of dominant carrier regulation will increase competition by freeing the petitioners from unnecessary regulation and will serve the public interest by promoting regulatory parity among providers of these services”); *Omaha Forbearance Order* ¶ 49 (granting Qwest’s petition to forbear from certain regulations in the Omaha MSA, in part, because the Commission believes that “forbearing from dominant carrier regulation in the Omaha MSA will serve the public interest by increasing the regulatory parity among providers of mass market interstate exchange access services in the Omaha MSA”).

⁹⁵ Lerner Decl. ¶ 49.

⁹⁶ Preamble, Pub. L. No. 104-104, 110 Stat. 56, 56 (1996).

⁹⁷ *Qwest Corp. v. FCC*, 689 F.3d 1214, 1217 (10th Cir. 2012).

⁹⁸ Memorandum Opinion and Order, *Petition of AT&T Inc. for Forbearance Under 47 U.S.C. § 160(c) from Title II and Computer Inquiry Rules with Respect to Its Broadband Service*,

Section 10 requires the Commission to forbear “if enforcement is unnecessary to ensure that rates and practices are just, reasonable, and not unreasonably discriminatory; enforcement is unnecessary to protect consumers; and forbearance is consistent with the public interest, in that it ‘will promote competitive market conditions’ and ‘enhance competition among providers of telecommunications services.’”⁹⁹ Although these provisions are listed as three separate conditions, there is “substantial overlap” between them.¹⁰⁰ Also, Section 160(d) specifies that “the Commission may not forbear from applying the requirements of section 251(c)” which are at issue here, “until it determines that those requirements have been fully implemented.”¹⁰¹ In previous orders, the Commission has established that Section 251(c) has been “fully implemented” for all incumbent LECs nationwide.¹⁰² Because all these conditions are satisfied here, the Commission should grant USTelecom’s Petition.

A. Continued Enforcement Is Unnecessary To Ensure That Charges and Practices Are Not Unjustly or Unreasonably Discriminatory

Granting forbearance will not affect consumers’ ability to obtain voice services at just and reasonable prices. As described above, consumers today predominantly receive their voice services over wireless, cable, or IP networks, rather than the traditional, circuit-switched PSTN.

22 FCC Rcd 18705, ¶ 16 (2007) (quoting Joint Explanatory Statement of the Committee of Conference, S. Conf. Rep. No. 104-230, at 113 (1996)).

⁹⁹ *Ad Hoc Telecomm. Users Comm. v. FCC*, 572 F.3d 903, 907 (D.C. Cir. 2009) (quoting 47 U.S.C. § 160).

¹⁰⁰ *Verizon v. FCC*, 770 F.3d 961, 964 (D.C. Cir. 2014) (reasoning that “it is hard to imagine any action that would enhance competition satisfying the public interest that actually would not also satisfy the first two factors”).

¹⁰¹ 47 U.S.C. § 160(d).

¹⁰² *See, e.g., Omaha Forbearance Order* ¶ 53 (“We conclude that section 251(c) is ‘fully implemented’ for all incumbent LECs nationwide.”); *Qwest Phoenix Order* ¶ 94 n.283 (same).

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By the end of this year, at least 60 percent of telephone households will have replaced their wireline service with wireless service.¹⁰³ And of those consumers who maintain a landline voice service, most of them get that service from a non-ILEC.¹⁰⁴ In markets where traditional and non-traditional providers compete with one another, regulation is unnecessary to ensure that services are offered at just and reasonable rates.¹⁰⁵

Commenters have incorrectly predicted in the past that curtailing regulations would hurt facilities-based competition. The data show the opposite has occurred. Facilities-based competition thrived after the Commission eliminated regulations that obligated ILECs to provide the UNE-Platform and line sharing for DSL. When eliminating the UNE-Platform requirement, the Commission explained, “[s]ince its inception, UNE-P was designed as a tool to enable a transition to facilities based competition. It is now clear, as discussed below, that, in many areas, UNE-P has been a disincentive to competitive LECs’ infrastructure investment.”¹⁰⁶ Since the curtailment of UNE-P, the facilities-based competition has not declined. Instead, the proportion of residential users receiving their services from competitors instead of ILECs has increased.¹⁰⁷

¹⁰³ See Petition at 9, Chart 2; Patrick Brogan, USTelecom, *USTelecom Industry Metrics and Trends 2018*, at 10 (Mar. 1, 2018), <https://www.ustelecom.org/sites/default/files/images/USTelecom%20Industry%20Metrics%20and%20Trends%202018.pdf>.

¹⁰⁴ See Petition at 9.

¹⁰⁵ See *Business Data Services Order* ¶ 86 (“We intend to apply ex ante rate regulation only where competition is expected to materially fail to ensure just and reasonable rates. As a matter of policy we prefer reliance on competition rather than regulation, wherever purchasers can realistically turn to a supplier beyond the incumbent LEC.”).

¹⁰⁶ *Triennial Review Remand Order* ¶ 218.

¹⁰⁷ For example, according to the Commission’s data, non-ILECs served approximately 44.3 million lines—27 percent of wireline lines—as of December 2008. The Commission’s most recent data show that non-ILECs served approximately 63 million lines—approximately 52 percent of wireline lines—as of December 2016. Non-ILECs’ share of residential wireline

Similarly, the Commission removed the line-sharing rules in 2003 because of concerns these regulations “skew competitive LECs’ incentives toward providing a broadband-only service to mass market consumers, rather than a voice-only service or, perhaps more importantly, a bundled voice and xDSL service offering.”¹⁰⁸ The Commission also worried that “readopting our line sharing rules on a permanent basis would likely discourage innovative arrangements between voice and data competitive LECs and greater product differentiation between the incumbent LECs’ and the competitive LECs’ offerings.”¹⁰⁹ Eliminating the rule created incentives for companies to invest in the equipment needed to deploy the high-speed services that consumers wanted.¹¹⁰ After the Commission eliminated line sharing, facilities-based broadband competition continued to increase, and cable operators solidified their position as the largest providers of these services.¹¹¹

services grew from approximately 26 percent to more than 49 percent during this period. *See* Ind. Anal. & Tech. Div., Wireline Comp. Bur., FCC, *Local Telephone Competition: Status as of December 31, 2013*, at 12, Table 1, & 13, Table 2 (Oct. 2014) (switched access line and VoIP subscriptions data as of December 2008); Ind. Anal. & Tech. Div., Wireline Comp. Bur., FCC, *Voice Telephone Services: Status as of December 31, 2016*, at 3, Fig. 2 (Feb. 2018) (switched access line and interconnected VoIP subscriptions data as of December 2016).

¹⁰⁸ Report and Order and Order on Remand and Further Notice of Proposed Rulemaking, *Review of the Section 251 Unbundling Obligations of Incumbent Local Exchange Carriers*, 18 FCC Rcd 16978, ¶ 261 (2003), *vacated in part and remanded*, *United States Telecom Ass’n v. FCC*, 359 F.3d 554 (D.C. Cir. 2004).

¹⁰⁹ *Id.*

¹¹⁰ *See Triennial Review Remand Order* ¶ 2.

¹¹¹ *See Restoring Internet Freedom Order* ¶ 96 n.358; *see also id.* ¶ 94 (“Prior FCC regulatory decisions provide a natural experiment Scholars employing the natural experiment approach found that prior to 2003, subscribership to cable modem service (not regulated under Title II) grew at a far faster rate than subscribership to DSL Internet access service (the underlying ‘last mile’ facilities and transmission which were regulated under Title II). After 2003, when the Commission removed line-sharing rules on DSL, DSL Internet access service subscribership

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B. Neither Consumers nor Businesses Will Benefit from Continued Enforcement of the Unbundling or Resale Mandates

The unbundling and resale mandates are unnecessary to protect consumers or businesses.

As discussed above, in the residential marketplace, little UNE-based competition remains.¹¹²

Indeed, wireline voice (and voice generally) is no longer the primary mode of communication.¹¹³

Consumers are choosing broadband wireless services that provide data, texting, and other non-voice services.¹¹⁴ These regulations do not promote that competitive environment or otherwise protect consumers.

Enterprise consumers will also not benefit from continued enforcement. The

Commission has already found that, “[t]o a large extent in the business data services market, the

experienced a statistically significant upward shift relative to cable modem service. A second statistically significant upward shift in DSL Internet access service subscribership relative to cable modem service occurred after the Commission clarified DSL Internet access service as an information service in 2005. This evidence suggests that Title II discourages not just ISP investment, but also deployment and subscribership, which ultimately create benefits for consumers. While some commenters contend that deployment and subscribership continued to increase after the *Title II Order*, such that nothing is amiss, this casual observation does not compare observed levels of subscribership and deployment to a relevant counterfactual that controls for other factors.”) (footnotes omitted).

¹¹² See Petition at 27-28.

¹¹³ See *Nineteenth Wireless Competition Report* ¶ 2 (“Consumers view various mobile voice, messaging, and data services as interchangeable with one another, and as a result, it is important to consider potential substitutes when analyzing the competitive landscape for these services, and to evaluate the mobile wireless industry as a whole”).

¹¹⁴ See *Twentieth Wireless Competition Report* ¶ 20 & n.68 (citing data reported by CTIA that showed a five-percent decline in annual minutes of voice use in 2016, but a 39-percent increase in monthly data usage per smartphone subscriber); *id.*, Statement of Commissioner Michael O’Rielly (The Commission’s most recent wireless competition report “provides a glimpse into industry trends For instance, while data usage is increasing, the annual voice minutes and the use of traditional SMS text messaging are decreasing. Many of the legacy wireless cellphone functions are being overtaken by Internet apps, such as Skype, FaceTime, WhatsApp and Facebook messenger.”).

competition envisioned in the [Communications Act] has been realized.”¹¹⁵ As discussed above, cable companies have successfully deployed their own facilities.¹¹⁶ And competitors, such as Zayo, continue to successfully expand and invest their fiber networks.¹¹⁷ Because non-ILECs have successfully developed their own networks, mandating unbundling and resale in the residential market is economically inefficient.

The ILEC-specific resale mandate is also unnecessary to protect customers. ILECs not only will continue to be required to resell these lines under Section 251(b), but also will have an incentive to do so because, as USTelecom’s Petition states, “[r]evenue from a resold line is better than no revenue at all.”¹¹⁸ And Verizon and other ILECs will also continue to make their DS1s and DS3s available through regulated and commercial wholesale offerings. Verizon still promotes its regulated DS1 and DS3 Special Access Service offerings, and has no plans to discontinue them.¹¹⁹

Verizon not only plans to continue making regulated and commercial wholesale offerings available, but fully expects to obtain similar offerings from other ILECs. Verizon relies extensively those offerings, both in connection with its wireless business and for its large CLEC entities that operate outside Verizon’s ILEC territory. Verizon relies not only on other ILECs, however, but also on cable operators and other competitive providers. For example, Verizon

¹¹⁵ *Business Data Services Order* ¶ 5.

¹¹⁶ *See supra* pp. 11-14.

¹¹⁷ *See supra* pp. 10-11.

¹¹⁸ Petition at 29.

¹¹⁹ *See Verizon Partner Solutions*, <https://www22.verizon.com/wholesale/solutionsbridge/solutionsbridge.html>.

buys business data services from major cable companies for its CLEC operations as well as its mobile backhaul.¹²⁰ It is precisely because of these competitive choices that Verizon and other ILECs will have every incentive going forward to continue to provide wholesale access to their networks.

To further ensure that current purchasers of UNEs are not adversely affected, the Commission should adopt the transition plan forged by the largest suppliers and purchasers of UNEs in the industry, including Windstream.¹²¹ This transition plan gives the industry several years to adjust to the new regime. For example, it gives UNE purchasers more than two years, until February 2021, to migrate from UNEs, and prevents price increases on UNEs until that time. This plan accordingly enables the Commission to remove unnecessary and outdated regulation while ensuring that providers will continue to have access to the communications services they need as they prepare for the transition to a more competitive environment.

C. Forbearance Is Consistent with the Public Interest

Forbearance is in the public interest if “the Commission determines that such forbearance will promote competition among providers of telecommunications services.”¹²² This part of

¹²⁰ See, e.g., Letter from Curtis L. Groves, Verizon, to Marlene H. Dortch, Secretary, FCC, WC Docket Nos. 16-143 & 05-25, RM-10593 (Aug. 5, 2016) (“Verizon buys Business Data Services as wholesale inputs to Verizon’s retail services and for backhaul to its cell sites.”); Letter from Maggie McCready, Verizon, to Marlene H. Dortch, Secretary, FCC, WC Docket Nos. 15-247 & 05-25, RM-10593, at 5-6 & Attach. A, Declaration of Brendan Gunn and Daniel Higgins ¶ 17 (Mar. 1, 2016) (describing Verizon’s position as a wholesale customer).

¹²¹ See Letter from Jonathan Banks, USTelecom, to Marlene H. Dortch, Secretary, FCC, WC Docket No. 18-141 (June 21, 2018).

¹²² 47 U.S.C. § 160(b); see also *Verizon v. FCC*, 770 F.3d 961, 964 (D.C. Cir. 2014) (explaining that “if the Commission determines that such forbearance will promote competition among

Section 10 is satisfied because, as described above, forbearance will leave intact competitive markets and will encourage ILECs and non-ILECs to invest in developing economically beneficial facilities. As described in the economic study by Singer *et al.* attached as Appendix B to USTelecom’s Petition, granting forbearance will benefit consumers, increase investment, and create jobs. Singer *et al.* estimate that, if forbearance were granted and customers began migrating to next-generation services, customers would save \$1 billion between 2018 and 2027.¹²³ Also, capital investment in next-generation technology would increase to between \$1.2 billion and \$1.8 billion over the next 10 years.¹²⁴ Investments in new technologies would “directly create between 2,214 and 3,176 jobs annually” for the next decade as companies install new fiber. That increased investment would also facilitate the deployment of 5G wireless networks,¹²⁵ and thereby help ensure that the United States remains a leader in advanced wireless broadband services.¹²⁶ As the Commission has noted, 5G promises to “make possible once-

providers of telecommunications services that determination shall be a basis for a Commission finding that forbearance is in the public interest”).

¹²³ See USTelecom’s Petition, at App. B, Singer *et al.*, *Assessing the Impact of Forbearance from 251(c)(3) on Consumers, Capital Investment, and Jobs* at 4 (May 2018).

¹²⁴ *Id.* at 20.

¹²⁵ *Id.* at 23.

¹²⁶ See *id.* ¶ 2. Indeed, all the FCC Commissioners have agreed that the United States must be the leader in deploying 5G Networks. See, e.g., *id.*, Statement of Chairman Ajit Pai (explaining that deploying “faster and more reliable wireless services for American consumers and businesses” will result in “more wireless innovation, such as novel applications based on the Internet of Things”); *id.*, Dissenting Statement of Commissioner Mignon L. Clyburn (“I strongly support efforts to facilitate the deployment of 5G next generation wireless services. . . . There is no question we will all see phenomenal benefits when (and if) 5G is fully deployed in all communities.”); *id.*, Statement of Commissioner Michael O’Rielly (noting that “deployment of wireless broadband throughout our nation, including 5G wireless services . . . is critical to preserving America’s preeminent leadership position”); *id.*, Statement of Commissioner Brendan Carr (predicting that winning the 5G race “will mean unleashing the next wave of American

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unimaginable advances, such as self-driving cars and growth of the Internet of Things.”¹²⁷

Encouraging those advances benefits all consumers.

This spurred investment will also benefit the economy as a whole. Singer *et al.* predict that forbearance will indirectly “create between 4,428 and 6,352 jobs annually.”¹²⁸ These jobs will be associated with installing fiber as well as communication equipment suppliers.¹²⁹ Lastly, if forbearance is granted, Singer *et al.* predict GDP growth will increase up to \$5.4 billion over the next decade.¹³⁰

CONCLUSION

Forbearance from the unbundling obligations and resale mandate will save consumers money, spur investment into new technologies, and create jobs. The Commission should grant USTelecom’s Petition.

innovation”); *id.*, Dissenting Statement of Commissioner Jessica Rosenworcel (“A wireless revolution is underway. The shift to fifth generation—or 5G—wireless is much more than incremental change. It will foster a whole new world of mobile connectivity . . .”).

¹²⁷ Second Report and Order, *Accelerating Wireless Broadband Deployment by Removing Barriers to Infrastructure Investment*, WT Docket No. 17-79, FCC 18-30, ¶ 1 (rel. Mar. 30, 2018) (“*Second Wireless Broadband Deployment Order*”).

¹²⁸ *Id.*

¹²⁹ *Id.*

¹³⁰ *Id.*

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EXHIBIT A

An Economic Analysis of the Impact of Forbearance from 251(c)(3) on Competition and Investments

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August 6, 2018

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Andres Lerner is an Executive Vice President at Compass Lexecon. He has extensive experience applying economic and econometric analysis to antitrust matters, including mergers, regulatory proceedings, and litigation. Dr. Lerner has provided economic testimony in legal cases and regulatory proceedings in various forums, including the U.S. Federal Communications Commission (“FCC”), the Antitrust Division of the U.S. Department of Justice (“DOJ”), the U.S. Federal Trade Commission (“FTC”), and the European Commission. He also has served as consultant for government agencies, including the FTC and DOJ. Dr. Lerner has consulted in matters involving a variety of industries, including wireless and wireline telecommunications, broadband services, cable and satellite television, payment card services, Internet search, mobile devices, e-commerce, online advertising, personal computers, pharmaceuticals, motion picture, video games, music, automotive, airlines, and real estate brokerage services.

Dr. Lerner has been named one of the foremost competition economists in *The International Who’s Who of Competition Economists* each year since 2013, and has been selected as one of the leading competition economists aged 45 and under by Who’s Who Legal and Global Competition Review for the *Who’s Who Legal: Competition – Future Leaders 2017* publication. He has published scholarly articles in leading economic and legal journals, including the *American Economic Review*, the *Antitrust Law Journal*, and the *Antitrust Bulletin*, and has co-edited a collection of seminal articles in antitrust economics. Dr. Lerner has taught Economics as a Visiting Professor at the University of Southern California Marshall School of Business. Dr. Lerner holds a Ph.D. in Economics from the University of California at Los Angeles (UCLA). He is a member of member of the American Economics Association and the American Bar Association.

I. Introduction and Executive Summary

1. The Telecommunications Act of 1996 (“1996 Act”) required incumbent local exchange carriers (“ILECs”) to offer competitive providers (“CLECs”) access to unbundled network elements (“UNEs”) at regulated rates.¹ Wholesale customers can use UNEs as inputs to provide legacy services, including “business data services” (BDS) for business customers and DSL and switched voice services to consumers.² This paper addresses the economic benefits and costs of forbearance from the unbundling and resale mandates under Section 251(c)(3) and Section 251(c)(4) of the Telecommunications Act of 1996 (“1996 Act”). As discussed in this paper, market developments over the past two decades have eliminated any competitive benefits of the unbundling requirements of the 1996 Act, but continued enforcement of those provisions will further distort the marketplace—delaying the transition to next-generation services and diminishing incentives to invest in next-generation technologies.

2. The market position of ILECs when the 1996 Act became law may have been a legitimate justification for the unbundling requirements, but such a justification no longer applies given the drastic changes in competitive conditions that have occurred since then. The marketplace is now characterized by intense competition and a wide variety of choices both for

¹ UNEs include DS1s, DS3s and copper loops.

² Federal Communications Commission, *Business Data Services in an Internet Protocol Environment; Technology Transitions; Special Access for Price Cap Local Exchange Carriers; AT&T Corporation Petition for Rulemaking to Reform Regulation of ILEC Rates for Interstate Special Access Services*, 32 FCC Rcd 3459 (4) (“FCC BDS Report and Order”), ¶ 6: “Business data service [] refers to the dedicated point-to-point transmission of data at certain guaranteed speeds and service levels using high-capacity connections. ... Businesses, non-profits, and government institutions use business data services to enable secure and reliable transfer of data, as a means of connecting to the Internet or the cloud, and to create private or virtual private networks.”

consumer and business end users as well as wholesale customers. Legacy voice and data services, including UNE-based services, largely have been replaced by next-generation services, and providers have made massive investments in deploying voice and data services to both consumers and business end users.

3. The consumer voice market is extremely competitive, with consumers able to choose from a wide array of competing services. ILECs face vigorous competition from various competitive providers and have lost, and continue to lose, significant market share. An inescapable trend of the past decade has been the abandonment of landline telephone service by households—about 60 percent of U.S. consumers have abandoned wireline voice service altogether in favor of wireless service. Even for users that continue to use wireline voice service, the use of voice-over-Internet protocol (“VoIP”) services provided over broadband connections continue to grow, with the majority of these VoIP connections through cable networks. As competitive choices for consumers have proliferated, demand for legacy wireline voice services has diminished, leading to a staggering decline in the number of ILEC switched-access voice connections. Currently, only 11 percent of U.S. consumer households have an ILEC switched voice connection.

4. Competitive conditions in the BDS marketplace also have changed drastically since 1996. As the FCC has concluded, the evidence “demonstrates substantial and growing competition in the provision of business data services in areas served by incumbent local exchange carriers (LECs)...”³ Significant competitive alternatives have proliferated, with rival providers offering services through various different technologies, including “packet-based” services (such as

³ FCC BDS Report and Order, ¶ 1.

“Ethernet”), which the FCC has described as the “future of business data services.”⁴ These packet-based BDS services, delivered using fiber and Hybrid Fiber Coaxial (“HFC”) networks, are rapidly replacing services supplied through legacy copper technology by ILECs. And, as the FCC has recognized, wireless technology is increasingly a viable option for the future provision of BDS.⁵ As the FCC acknowledged, “[t]he dynamic nature of the business data services market is indisputable.”⁶

5. As competitive, facilities-based alternatives have proliferated, the importance of services provided through UNEs has diminished significantly, making mandated UNEs unnecessary to ensure a competitive marketplace. The share of voice services that are provided to consumers by competitive providers using UNEs or resold services is very small and continues to decrease. Similarly, in the BDS marketplace, use of UNEs account for a small share of services provided. Given the dramatic developments and innovation in the telecommunications industry, there can be no reasonable basis for a claim that ILECs possess monopoly power by virtue of their control over bottleneck networks, or that unbundling mandates are necessary to protect competition and consumers.

6. While these competitive developments have eviscerated the need for unbundling requirements, those requirements will continue to have adverse economic consequences. As the economic literature shows, regulation of competitive industries (and in which no material “market failures” exist) can harm competition and consumers, and can distort market outcomes. Legacy services provided through UNEs persist (although their share is small and declining)

⁴ FCC BDS Report and Order, ¶ 88.

⁵ FCC BDS Report and Order, ¶ 38.

⁶ FCC BDS Report and Order, note 4.

largely because regulated UNE rates are significantly below market rates. This “subsidy” distorts the marketplace and slows migration to next-generation services. And market distortions that inefficiently keep consumers on legacy networks can reduce incentives of both ILECs and competitive providers to invest in next-generation technologies such as fiber.

7. In sum, while there are no longer any material competitive or consumer benefits from the unbundling requirements, such rules continue to create economic inefficiencies. Given the changes in the marketplace that have occurred over the past two decades, forbearance from Section 251(c) would enhance investment incentives and accelerate the transition to next-generation services.

II. Economic Principles of Regulation

8. The appropriate economic framework to assess the impact of a particular regulation (or forbearance from regulation) on consumers is a cost-benefit analysis (“CBA”).⁷ CBA is a methodology for systematically assessing tradeoffs inherent in different alternatives (*e.g.*, regulations, policies, investments, or strategies), and is an economically useful tool in decision-making. From an economic perspective, such a CBA should focus on the impact of forbearance from Section 251(c) on competition and investment, which are fundamental to improving consumer welfare. As discussed below, regulations can be beneficial when there is a substantial “market failure.” But regulations also can impose various costs on firms and consumers, especially in competitive industries. These regulatory costs include the cost of compliance as well as various marketplace distortions that regulations can generate. Assessing the impact of a

⁷ Arnold C. Harberger, “Three Basic Postulates for Applied Welfare Economics: An Interpretive Essay,” 9 *Journal of Economic Literature* 785 (1971). CBA has been applied extensively in environmental, health and safety regulation, antitrust, and other types of regulation.

regulation on consumers and economic efficiency requires evaluating these potential benefits and costs.

9. It is widely accepted among economists that, absent a market failure—wherein an unfettered marketplace results in an inefficient allocation of resources—competition results in market outcomes that are beneficial to consumers. Therefore, the key initial economic question in addressing the benefits and costs of a particular regulation is what is the market failure that the regulation is supposed to address? Fundamental economic principles of regulation require a sound understanding of the market failure to be addressed before evaluating the benefits and costs of regulatory alternatives. Even in instances in which a market failure does exist, another fundamental question is whether a particular regulation regime is likely to lead to more efficient economic outcomes than alternative solutions or than an unfettered marketplace can achieve.

10. There are several types of “market failures” that may necessitate some type of regulation. One type of market failure is the existence of “externalities,” which arise when transacting parties do not internalize all costs and benefits—in other words, when actions of one party impose uncompensated benefits or costs on other parties. Externalities could be negative—leading to too much output, or positive—leading to too little output – if left unregulated. Classic examples of negative externalities are pollution and traffic congestion. A common example of a positive externality is technological spillovers, where a firm’s innovation not only benefits the firm, but contributes to overall technological knowledge and thereby benefits others.⁸ Another

⁸ The presence of externalities does not necessarily require regulation, since private parties often implement contractual and other arrangements to internalize such costs and benefits. In fact, externalities are ubiquitous and in most instances do not require regulation. Even when government intervention is necessary, externality problems can be addressed through rules targeted at creating incentives for parties to internalize externalities (*e.g.*, taxes or subsidies) or restrictions on particular activities (*e.g.*, limits on pollution).

type of market failure may arise due to incomplete or asymmetric information.⁹ Many types of social regulation in the area of the environment, occupational health and safety, consumer protection, and labor attempt to solve externalities and information-related market failures.

11. The traditional economic rationale for public-utility regulation is that the production of a particular good or service is characterized by “natural monopoly.” Under natural monopoly conditions, it may be efficient for a single firm to produce all market output since having a single producer minimizes costs.¹⁰ But having a single monopoly producer in an unregulated market may lead to allocative inefficiencies due to prices that are inefficiently high, reducing consumer welfare. Regulating the prices set by natural monopolies therefore may be economically justified. This rationale has been used to justify price and entry regulation of natural monopolies in, for example, electricity supply, natural gas transmission and distribution, and water and sewer service.

12. More generally, firms may acquire monopoly power even in instances where the market is not a natural monopoly, including by innovating and competing successfully. In those instances, monopoly power may be transitory, especially in dynamic, innovation-driven industries. Absent the existence of monopoly power, competition creates incentives for providers to implement business models and practices that benefit consumers. The greater the degree of competition, the less likely that individual firms would have the incentive or ability to engage in practices that harm consumers or competition, as consumers can choose products and services that best suit their purposes in terms of price and quality attributes.

⁹ Information-related market failures also generally do not necessarily require regulation, since firms often implement strategies to credibly signal information to consumers and consumers often rely on a firm’s reputation, even in the presence of incomplete or asymmetric information.

¹⁰ See, *e.g.*, Dennis W. Carlton and Jeffrey M. Perloff, MODERN INDUSTRIAL ORGANIZATION 104-105 (Prentice Hall, 4th ed., Addison-Wesley 2004).

13. While the existence of monopoly power by ILECs may have been a legitimate justification for the unbundling requirements of the 1996 Act, such a justification no longer applies given the significant changes in competitive conditions that have occurred since 1996. As discussed in Section III below, current competitive conditions are inconsistent with the existence of monopoly power by ILECs. The telecommunications marketplace is now characterized by intense competition and a wide variety of choices both for consumer and business end users as well as wholesale customers.

14. Regulations also can impose various costs on firms and consumers, especially regulation of competitive industries. These costs include costs of compliance, as well as distortions created in the marketplace. Regulation may, for instance, inefficiently alter the rate and direction of technological change,¹¹ distort consumer choices,¹² or distort firms' input choices.¹³ Competitive distortions also can arise, for example, from favoring one type of competitor over others, or tilting the market towards one type of technology. Such regulatory asymmetries can undermine consumer welfare by distorting competition and investment incentives, and can be especially harmful in dynamic industries with rapid technological change. Regulation of competitive industries, and especially onerous public-utility style regulation such as unbundling requirements, can impose significant costs, while providing few if any benefits.

¹¹ See, e.g., William M. Capron, *Technological Change in Regulated Industries*, Washington, D.C. Brookings Institution (1971).

¹² See, e.g., Michael A. Spence, "Monopoly, Quality, and Regulation," 6 *Bell J. Econ.* 417 (1975).

¹³ See, e.g., Harvey Averch and Leland L. Johnson, "Behavior of the Firm Under Regulatory Constraint," 52 *Amer. Econ. Rev.* 1052 (1962).

III. Competitive Benefits of Unbundling Requirements No Longer Exist Given the Drastic Changes in Competitive Conditions Since 1996

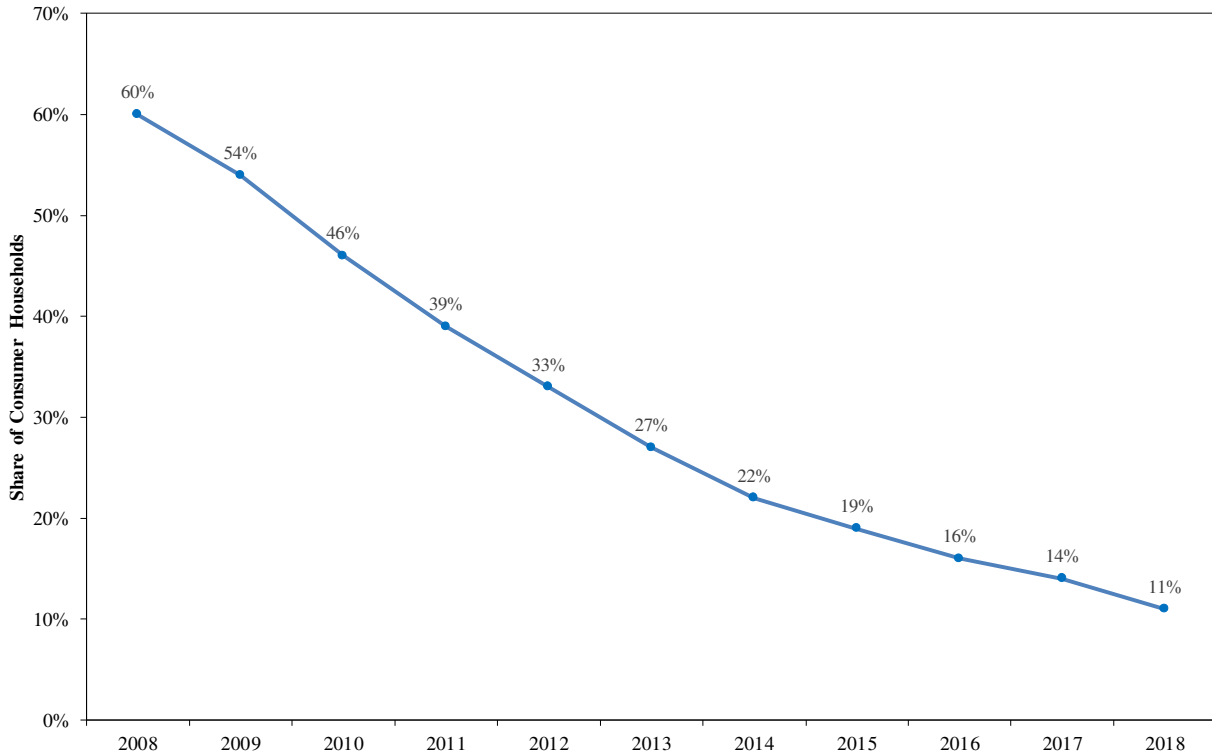
15. Competitive conditions in the telecommunications marketplace have changed dramatically since the 1996 Act became law, both in the consumer voice market (Section A) and in the BDS marketplace (Sections B and C). While the monopoly power of ILECs may have formed a legitimate basis for the unbundling requirements of the 1996 Act, such a justification no longer applies—competitive developments over the past two decades have eviscerated the need for mandated UNEs to ensure a competitive marketplace.

A. Consumer voice services

16. The consumer voice market is extremely competitive, with consumers able to choose from a wide array of competing services. ILECs face vigorous competition from cable operators and wireless carriers, as well as other platforms, including over-the-top VoIP. As competitive choices for consumers have proliferated, demand for legacy wireline voice services has declined. The number of ILEC consumer switched voice connections has fallen significantly in recent years, as shown in Figure 1 below. As of 2018, only 11 percent of U.S. consumer households are estimated to have an ILEC switched voice connection, as shown in Figure 1 below.¹⁴

¹⁴ Patrick Brogan, “USTelecom Industry Metrics and Trends 2018,” March 1, 2018 at 10, *available at* <https://www.ustelecom.org/sites/default/files/images/USTelecom%20Industry%20Metrics%20and%20Trends%202018.pdf>.

Figure 1: ILEC Consumer Switched Voice Connections (2008-2016)

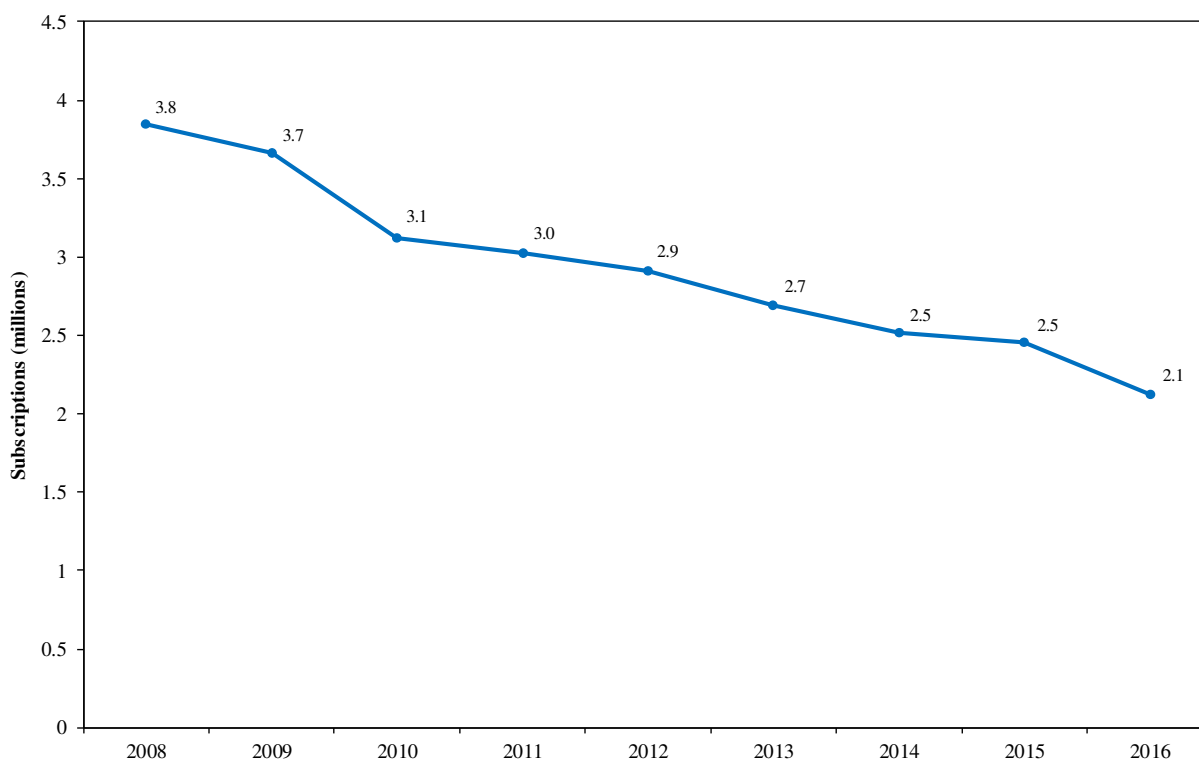


Source: *USTelecom Industry Metrics and Trends 2018*, March 1, 2018.

17. As consumers have adopted competitive options, the importance of services provided through UNEs also has diminished. The number of UNE loops in use has been steadily declining over time, as shown in Figure 2 below.¹⁵

¹⁵ The FCC data upon which Figure 2 is based do not separate UNE loops by type of usage (consumer vs. business).

Figure 2: UNE Loops Provided to Non-ILECs (2008-2016)



Notes: Includes local exchange telephone service (switched access lines) UNE loops provided by ILECs to unaffiliated carriers for resale. Figures as of December of each year.

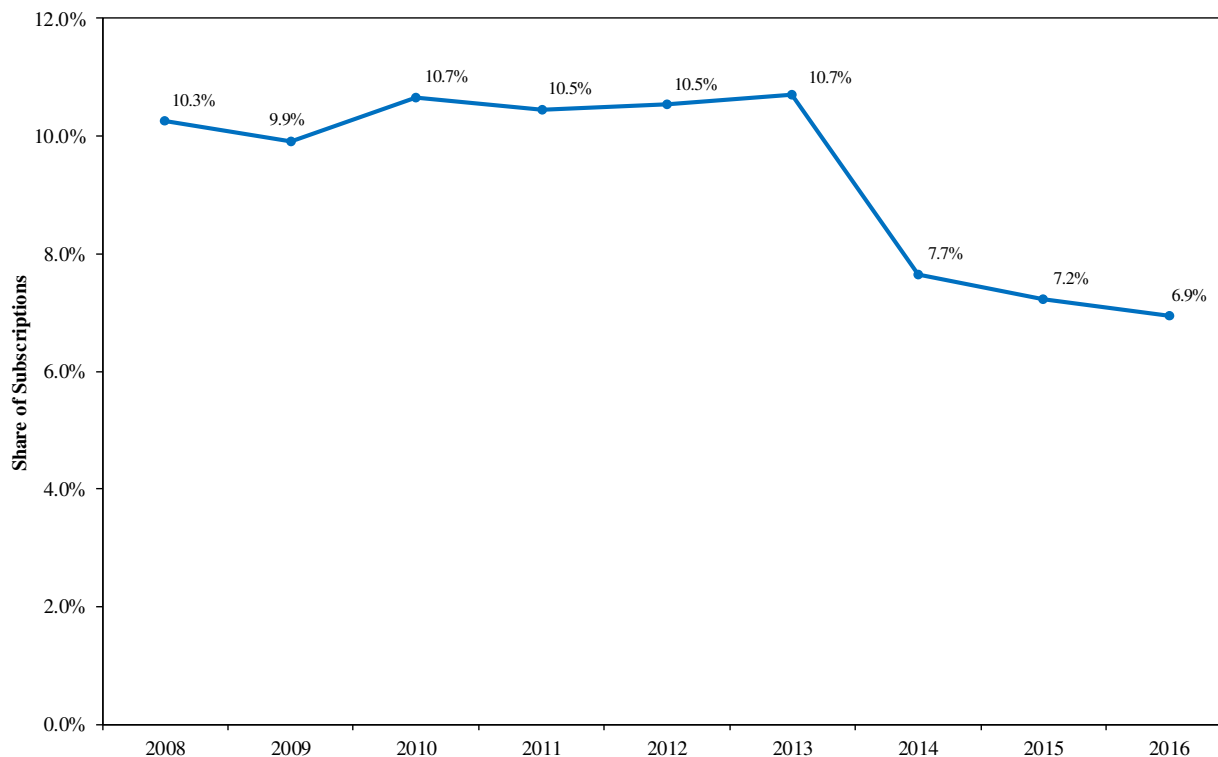
Sources: FCC Voice Telephone Services Report as of December 31, 2016.

18. The share of voice services that are provided by competitive carriers using UNEs or resold services is quite small, and decreasing, as shown in Figure 3 below. In 2016, only 6.9 percent of wireline voice connections were provided via UNE loops.¹⁶ Given recent trends, this share is likely lower now.¹⁷

¹⁶ Data includes consumer and business subscriptions. The numerator is UNE voice services, which is defined as non-ILEC service provided from either UNE loops or other services obtained from an unaffiliated ILEC. The denominator is total voice services nationwide, which includes both switched access lines and interconnected VoIP subscriptions from ILECs and non-ILECs both in the consumer and business sectors.

¹⁷ Competitive carriers may lease ILEC facilities through bilateral negotiation with an ILEC rather than under the mandate of §251. The data for the calculation does not separate out mandated UNEs from these leased ILEC facilities, which further underscores the minimal impact of the unbundling requirements on competition for provision of voice services.

Figure 3: UNE Loops and Resold Wholesale Service as a Share of Total Wireline Voice Connections (2008-2016)



Notes: UNE Loop and Resold numerator includes Non-ILEC switched access voice service provided via UNE Loops or other services. Denominator includes ILEC and Non-ILEC switched access and VoIP voice service for both consumer and business grade services. Figures as of December of each year.
Sources: FCC Voice Telephone Services Report as of December 31, 2016.

19. The significant decline in demand for legacy wireline voice services and the relevance of voice services provided via UNEs has been caused by proliferation of competitive alternatives, including wireless voice services (provided by wireless carriers) and VoIP (provided mostly by cable operators).

20. Wireless: An inescapable trend of the past decade has been the abandonment of landline telephone service by U.S. households as they switch to wireless-only service. While in 2003 just 5 percent of U.S. households were wireless-only, it is projected that by the end of 2018 about 60 percent of U.S. households will be wireless-only.¹⁸ Today, almost all U.S. households have

¹⁸ Patrick Brogan “USTelecom Industry Metrics and Trends 2018,” March 1, 2018 at 10, available at

access to two or more wireless providers using voice services. As of January 2017, at least two providers offered some kind of wireless service to 99.8 percent of the U.S. population, and high-speed LTE services were available from at least two wireless providers for approximately 99.1 percent of American consumers.¹⁹

21. Competitive wireline voice services: Even for users that continue to use wireline voice service, consumers now have competitive options to traditional switched voice delivered via ILEC copper loop. In particular, consumers can use VoIP, which sends and receives phone calls through a broadband Internet connection.²⁰ The majority of VoIP connections are through cable operators,²¹ which is not surprising given that cable operators are the largest providers of residential broadband Internet access.²² The use of competitive VoIP services has grown and

<https://www.ustelecom.org/sites/default/files/images/USTelecom%20Industry%20Metrics%20and%20Trends%202018.pdf>.

¹⁹ Federal Communications Commission, *Web Appendix III: Elements of Inter-Firm Rivalry*, available at <https://www.fcc.gov/20th-mobile-wireless-report-web-appendices>.

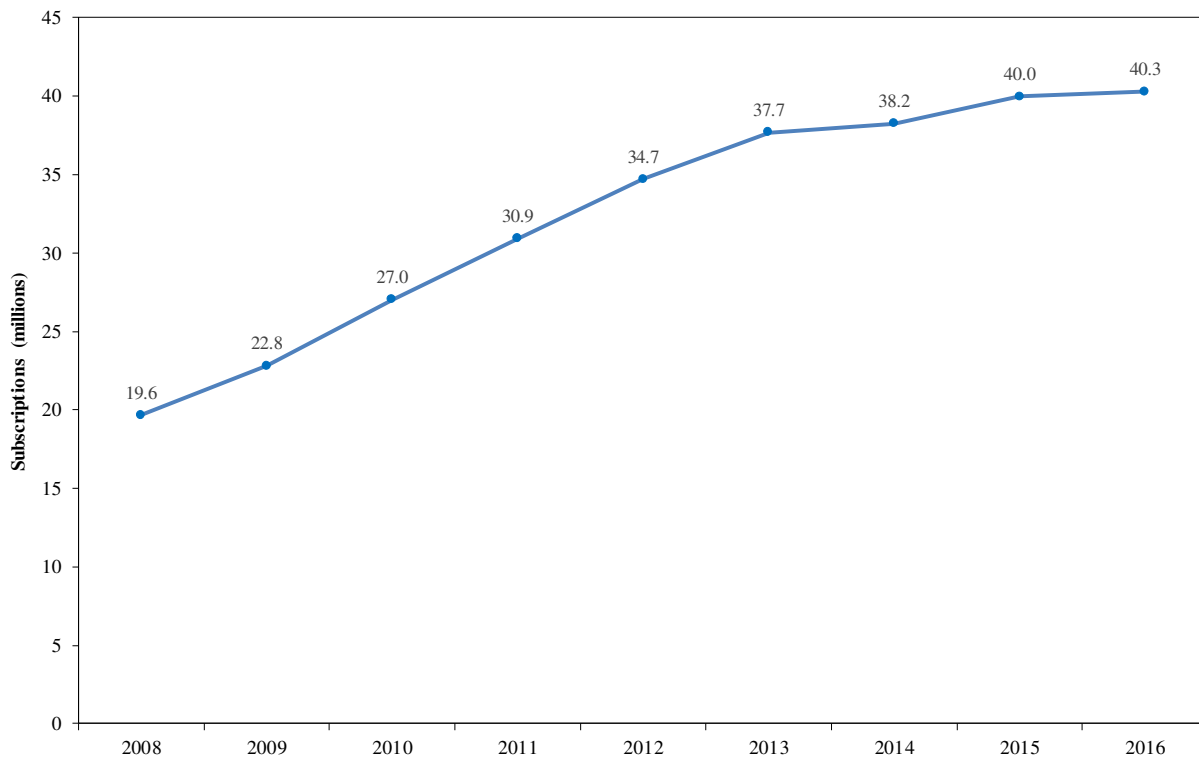
²⁰ VoIP services may be provided by ILECs or non-ILECs. A VoIP customer uses either their computer, an IP phone, or a traditional phone connected to an adapter to initiate calls which travel through broadband networks (*e.g.*, cable or DSL) to either a VoIP, mobile, or traditional switched number. (See, *e.g.*, Federal Communications Commission, “Consumer Guide Voice Over Internet Protocol (VoIP),” January 27, 2017, *available at* <https://transition.fcc.gov/cgb/consumerfacts/voip.pdf>.)

²¹ In 2016, over 50 percent of VoIP was provided by cable operators. In particular, 88 percent of VoIP was “interconnected” (supplied directly by the customer’s broadband provider), while 12 percent was supplied via an over-the-top (OTT) service (where the OTT firm is not affiliated with the broadband provider). 62 percent of interconnected VoIP uses cable for the “last mile” connection, implying 55 percent ($88\% \times 62\%$) of VoIP is supplied directly from the customer’s cable provider. Given the prevalence of cable broadband, it is likely that most OTT VoIP service is also delivered over cable. (Federal Communications Commission, *Voice Telephone Services: Status as of December 31, 2016*, Industry Analysis and Technology Division Wireline Competition Bureau, February 2018, Table 1.)

²² As of 2016, cable operators provided 82 percent of broadband connections (at least 25Mbps download speed/3Mbps upload speed). (Federal Communications Commission, “Internet Access Services: Status as of December 31, 2016,” Industry Analysis and Technology Division Wireline Competition Bureau, February 2018, Figure 21.)

continues to grow. Figure 4 below shows the number of consumer voice connections using VoIP services.

Figure 4: Consumer VoIP Connections (2008-2016)



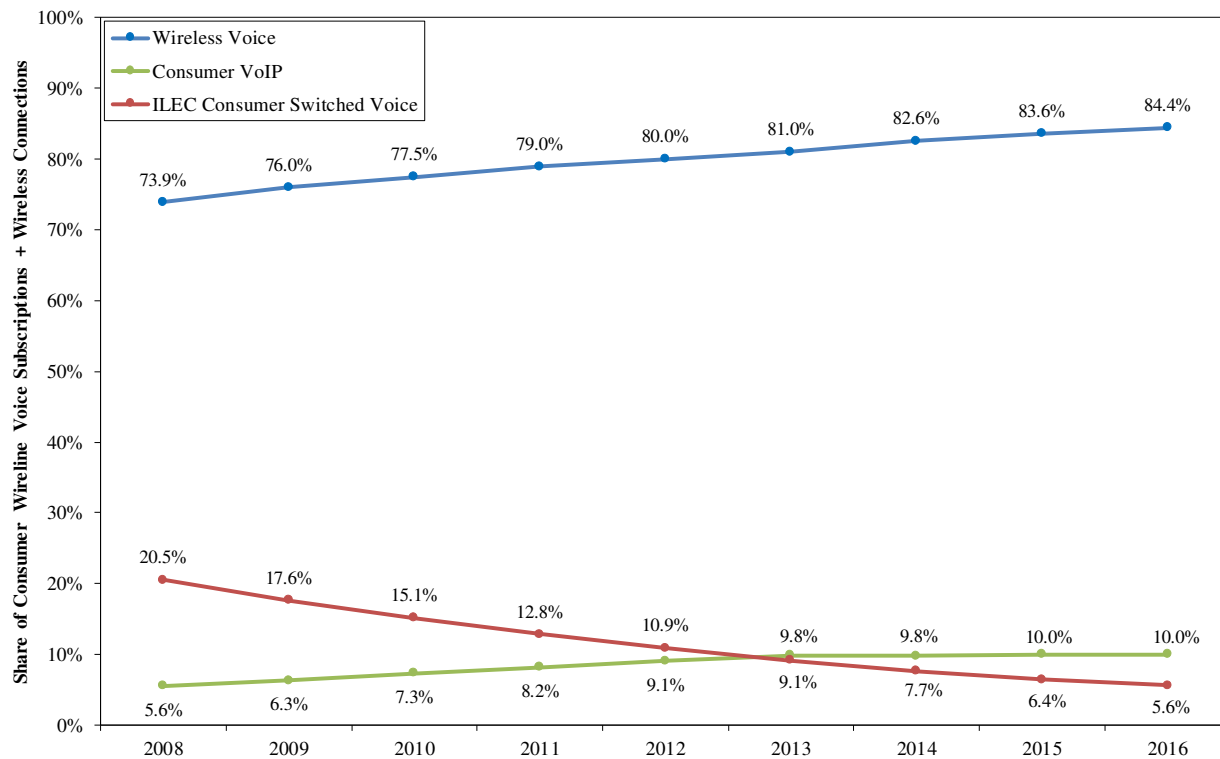
Notes: Includes interconnected VoIP subscriptions for consumer grade services. Figures as of December of each year.
Sources: FCC Voice Telephone Services Report as of December 31, 2016.

22. Overall, the importance of ILEC switched voice service has declined continually relative to wireless voice and VoIP, and is currently quite small in terms of total consumer voice connections. Figure 5 below shows the relative shares of wireless voice, VoIP and ILEC switched voice subscriptions in the U.S. by year from 2009-2016.²³ While wireless voice and VoIP have grown steadily, ILEC switched voice has fallen substantially as a share of total

²³ This chart excludes non-ILEC switched voice connections, which accounted for just two percent of consumer wireline voice subscriptions in 2016.

consumer voice subscriptions, from just over 20% in 2008 to around 6% in 2016. VoIP subscriptions now outnumber ILEC switched voice subscriptions by a wide margin.

Figure 5: Shares of Consumer Wireline and Wireless Voice Subscriptions



Notes: Excludes non-ILEC switched voice connections. Figures as of December of each year.
Sources: FCC Voice Telephone Services Report as of December 31, 2016.

23. Email/Text/Messaging Apps: Alternative communication methods that have emerged over the last 15 years are another factor leading to the drastic decline in demand for traditional voice service. These methods include email, SMS (Short Message Service or “texting”), MMS (Multimedia Messaging Service), and app data (e.g., through use of social media and mobile applications), which are transmitted via mobile devices and desktop/laptop computers. From 2005 through 2011 the number of SMS messages increased from 81 billion to over 2.3 trillion

annual messages.²⁴ Following 2011, SMS messages reached a saturation point, with a portion partially replaced by MMS. MMS messages have the advantage of sending media such as pictures along with plain text. Over the period 2011 to 2016, MMS messages grew from 50 billion to over 275 billion annual messages.²⁵ In recent years, the use of messaging services like SMS have been dwarfed by the growth of more data-intensive messaging services such as iMessage (via Apple products), WhatsApp, Snapchat, Google Hangouts, Instagram, Twitter, Facebook, and other social media/communication platforms. A large and increasing portion of Americans use these social media and related online communication platforms.²⁶

B. Business data services

24. Competitive conditions in the BDS marketplace also have changed tremendously since 1996. When the 1996 Act became law, most business customers purchased ILEC voice and data services. Since then, significant competition and competitive alternatives have proliferated. As the FCC has concluded, the evidence “demonstrates substantial and growing competition in the provision of business data services in areas served by incumbent local exchange carriers (LECs)...”²⁷ The FCC also concluded that legacy TDM services (including those offered via UNEs) have competitive substitutes in the form of next-generation BDS technologies, including fiber, cable Ethernet, and “best efforts” broadband services.²⁸

²⁴ CITA, *CITA’s Wireless Industry Indices Report*, Year-End 2016 Results, Table 45 at 100.

²⁵ CITA, *CITA’s Wireless Industry Indices Report*, Year-End 2016 Results, Table 47 at 102.

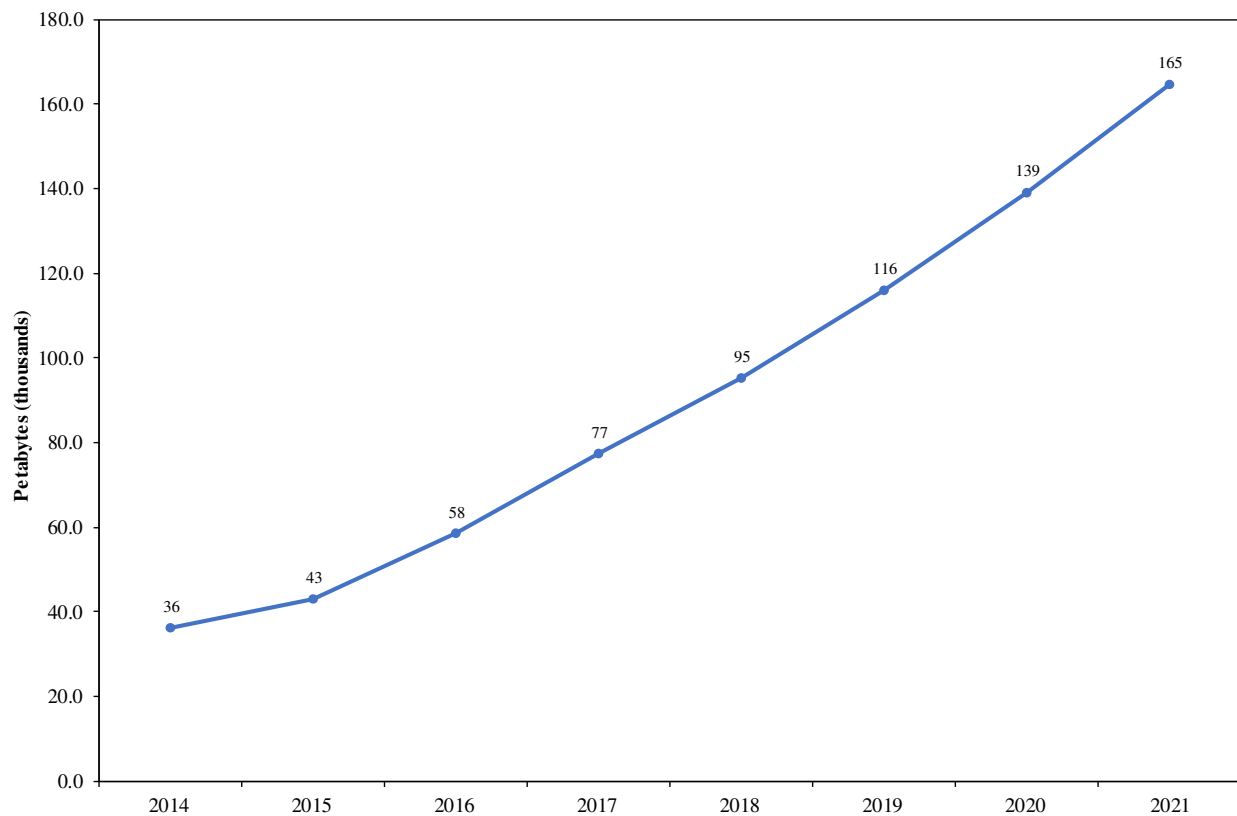
²⁶ Currently, a quarter or more of U.S. adults say they use website and apps such as Facebook, Instagram, Snapchat, and Twitter. (Aaron Smith and Monica Anderson, “Social Media Use in 2018,” Pew Research Center, March 1, 2018, *available at* <http://www.pewinternet.org/2018/03/01/social-media-use-in-2018/>.)

²⁷ FCC BDS Report and Order, ¶ 1.

²⁸ FCC BDS Report and Order, ¶¶ 22-35.

25. Significant competition and investments in the BDS marketplace have led to a rapid increase in output and decline in prices. North American business IP traffic has grown at a rate of about 20 percent year-over-year, and is forecasted to continue rapidly growing, as shown in Figure 6 below. Despite this growth in demand and usage, the price of data over broadband Internet has declined sharply in recent years, with wireline prices per Mb per second falling 67 percent from 2010 to 2015.²⁹

Figure 6: North American Business IP Traffic Forecast (2014-2019)



Notes: Traffic based on enterprise forecasts. Forecasts based on the number of network-connected computers.

Sources: Cisco Visual Networking Index: Forecast and Methodology, 2014-2019; Cisco Visual Networking Index: Forecast and Methodology, 2016-2021.

²⁹ See, e.g., USTelecom, “The Broadband Internet Economy is Thriving,” February 2016 at 6, available at <https://www.ustelecom.org/sites/default/files/files/USTelecom-White-Paper-1.pdf>.

26. Providers of BDS now offer a wide array of technologies in competition with services provided by ILECs via “circuit-based” technology.³⁰ An alternative to circuit-based services is the use of “packet-based” technology. Packet-based services can be delivered using either fiber or Hybrid Fiber Coaxial (HFC) technology.³¹ HFC technology is provided by cable operators and accounts for the majority of business broadband, with over three times as many business connections as fiber.³² Packet-based transmission takes data and divides it into smaller blocks (packets), which can individually be routed to the destination along the most efficient path.

³⁰ Circuit-based technology is typically copper-based links which provide service using time-division multiplexing or TDM, which refers to a technique to combine multiple signals over a single wire by dividing access to the wire into sequential intervals. Each signal has access to the entire bandwidth of the wire during its interval. (See, *e.g.*, ATIS Telecom Glossary, “time-division multiplexing (TDM),” *available at* <http://www.atis.org/glossary/definition.aspx?id=1226>.) Data services for business may be provided over circuit-based technologies, which are also sometimes called “legacy” services. This consists mostly of TDM-based services including DS1s and DS3s. (See, *e.g.*, Marc Rysman, “Empirics of Business Data Services,” White Paper, April 2016, *available at* <https://docs.fcc.gov/public/attachments/DOC-340040A6.pdf>.) DS1 and DS3 are associated with T1 and T3 lines, which have a symmetrical bandwidth of about 1.5 Mbps and 45 Mbps, respectively.

³¹ See *e.g.*, Marc Rysman, “Empirics of Business Data Services,” White Paper, April 2016 at 4, *available at* <https://docs.fcc.gov/public/attachments/DOC-340040A6.pdf>.

³² Cable accounted for 71 percent of non-residential broadband connections (25 Mbps download speed/3 Mbps upload speed) in 2016. 22 percent were fiber and 2 percent were copper. Federal Communications Commission, *Internet Access Services: Status as of December 31, 2016*, Industry Analysis and Technology Division Wireline Competition Bureau, February 2018 at 21-22.

Once the packets arrive at the end user they are repackaged into the correct order.³³ Packet-based services have far greater bandwidth potential than circuit based, ranging up to 100 Gbps.³⁴

27. Packet-based BDS are rapidly replacing legacy copper technology supplied primarily by ILECs. As the FCC has described:

Although incumbent LECs once dominated the business data services market selling circuit-based DS1s and DS3s, such technology is becoming obsolete. Significant increases in bandwidth demand are being driven by bandwidth-hungry applications, mainly video services (teleconferencing, training, etc.) as well as by web and cloud-based services. These rapidly increasing bandwidth demands will place an ever increasing demand for services such as Ethernet, especially over fiber, which can scale bandwidth to meet these requirements more effectively than can the old legacy services. ... we expect this shift from circuit-based to packet-based services to continue at a rapid pace.”³⁵

The FCC has noted that there is substitution between circuit- and packet-based BDS services.³⁶

As the FCC stated, customers “are choosing to purchase Ethernet services, subject to their

³³ See, e.g., Lee Copeland, “Packet-Switched vs. Circuit-Switched Networks,” Computerworld, March 2000, *available at* <https://www.computerworld.com/article/2593382/networking/networking-packet-switched-vs-circuit-switched-networks.html>.

³⁴ A packet-based system does have the potential to suffer from issues such as packet loss, jitter, and latency during the routing and reassembly process. (FCC BDS Report and Order, ¶¶ 22-23.)

³⁵ FCC BDS Report and Order, ¶ 3.

³⁶ FCC BDS Report and Order, ¶ 21. See also, FCC BDS Report and Order, ¶ 24: “Functionally, TDM and packet-based services are broadly interchangeable in the business data services realm as both are used to provide connectivity for data network and point-to-point transmissions and both services can be delivered over the same network infrastructure. Incumbent and competitive LEC providers offer both types of services to similar types of customers and their marketing materials juxtapose these two technologies against each other. Customers of TDM-based services are also switching to packet-based services. And commenters representing suppliers agree, with limited exception, the services, whether circuit-based or packet-based, are substitutes and in the same product market.”

availability and pricing, and existing customers of TDM-based service are switching to Ethernet.”³⁷

28. Fiber: The introduction of fiber-based broadband services over fiber-to-the-home (or “FTTH”) networks starting around a decade ago ignited the race to make next-generation broadband services available to customers. FTTH networks, while expensive to deploy, offer virtually unlimited capacity to meet customer demand for higher speeds and lower latency. Fiber is capable of carrying voice, video, and broadband data services, and can transmit data at speeds ranging into the hundreds of Mbps.³⁸ A large number of firms offer fiber services to businesses, as shown on Table 1 below.³⁹

Table 1: Number of Providers Offering BDS by Technology (2016)

Technology	Number of Providers
Fiber	1,372
Circuit	1,196
Fixed Wireless	992
HFC	431
All Other	6
Satellite	5

Notes: Counts the number of providers offering each technology. Providers may be counted multiple times. There are 2,558 unique providers. Includes only providers offering service to businesses. Includes all fifty states plus D.C. Fiber does not include fiber to the curb. As of December 2016.
Source: FCC Fixed Broadband Deployment Data.

³⁷ FCC BDS Report and Order, ¶ 25.

³⁸ See, e.g., Federal Communications Commission, “Types of Broadband Connections,” June 23, 2014, *available at* <https://www.fcc.gov/general/types-broadband-connections>.

³⁹ According to FCC data, over 2,500 BDS providers offer services in the U.S. (as of December 2016) using any fixed broadband technology, including fiber. FCC Fixed Broadband Deployment Data. A single provider may offer more than one technology.

29. Consistent with the large number of firms offering fiber service to business customers, fiber broadband has become widely available. In recent years, fiber broadband providers to business customers have invested in growing the availability and quality of their fiber networks.⁴⁰ As the FCC has noted, “the market for business data services is dynamic with a large number of firms building fiber and competing for this business. ... Competitive LECs such as Zayo, U.S. Telepacific and Birch continue to invest and expand their competitive fiber networks with very successful results.”⁴¹

30. One increasingly important use of fiber technology is “dark fiber.” Dark fiber refers to firms leasing unused fiber from fiber network operators to create their own privately-operated fiber network.⁴² Dark fiber, which offers speed, flexibility, security, and cost efficiencies, has become an increasingly viable option for small and large businesses.⁴³

⁴⁰ See, e.g., USTelecom, “The Competitive Business Broadband Marketplace,” February 2016 at 8, *available at* <https://www.ustelecom.org/sites/default/files/files/USTelecom-White-Paper-2.pdf>.

⁴¹ FCC BDS Report and Order, ¶ 2.

⁴² See, e.g., Interoute, “What is Dark Fiber?” *available at* <https://www.interoute.com/what-is-dark-fibre>.

⁴³ See, e.g., Phil Bartlett, “Dark Fiber: Embracing The Dark Side,” NetworkComputing, February 2, 2016, *available at* <https://www.networkcomputing.com/networking/dark-fiber-embracing-dark-side/1084652357>. See also, Sean Buckley, “CenturyLink sales boosted by enterprises’ shift to dark fiber to secure sensitive traffic,” FierceTelecom, March 20, 2018, *available at* <https://www.fiercetelecom.com/telecom/centurylink-says-enterprises-are-turning-to-dark-fiber-to-secure-sensitive-traffic>; Sean Buckley, “Verizon’s McAdam: Our multiuse fiber approach offers more cost efficiencies,” FierceTelecom, May 22, 2017, *available at* <https://www.fiercetelecom.com/telecom/verizon-s-mcadam-our-multi-use-fiber-approach-offers-more-cost-efficiency>.

31. Hybrid Fiber Coaxial (HFC): HFC utilizes a combination of fiber optic and coaxial cable technologies to create a network.⁴⁴ Fiber connects the backbone of the network, feeding into local coaxial cables that connect to the end users. Cable operators use their HFC networks to supply business data services. The FCC has noted the growth in BDS provided by cable companies, stating that “cable providers ... have emerged as formidable competitors in [the BDS] market.”⁴⁵ Cable companies have invested substantially to expand their high-capacity broadband networks. In the roughly 20 years since the passage of the 1996 Act, U.S. broadband providers have invested an estimated \$1.6 trillion.⁴⁶ This technology offers reliability, scalability, and quality of service with symmetrical speeds up to 10 Mbps.⁴⁷ HFC also is widely available—with areas with HFC or some combination of HFC and other technologies accounting for 60 percent of census blocks.⁴⁸ Almost 70 percent of census blocks have either HFC and/or fiber.⁴⁹

32. Some industry observers contend that non-fiber-based packet technology delivered over HFC is not a good substitute for circuit-based technology, due to lower performance and usual

⁴⁴ Most cable operators use hybrid fiber-coaxial (HFC) networks, where fiber is used for transmission from major distribution stations to smaller neighborhood “nodes,” and then coaxial cable runs from the nodes to subscribers’ homes.

⁴⁵ FCC BDS Report and Order, ¶ 2. The FCC further noted that “Cable business data services are reported to have grown at approximately 20 percent annually for the past several years.” (FCC BDS Report and Order, ¶ 2.)

⁴⁶ Patrick Brogan “USTelecom Industry Metrics and Trends 2018,” March 1, 2018 at 12, *available at* <https://www.ustelecom.org/sites/default/files/images/USTelecom%20Industry%20Metrics%20and%20Trends%202018.pdf>.

⁴⁷ FCC BDS Report and Order, ¶ 55.

⁴⁸ See, e.g., Federal Communications Commission, “Fixed Broadband Deployment Data from FCC Form 477,” as of December 31, 2016, *available at* <https://www.fcc.gov/general/broadband-deployment-data-fcc-form-477>.

⁴⁹ *Id.*

lack of service level agreements (SLAs).⁵⁰ But HFC providers offer guarantees that can address packet loss, latency, and availability among other potential performance issues. As the FCC has concluded, HFC provides “significant” competitive pressure on both fiber and legacy TDM-delivered BDS services.⁵¹

33. Another competitive substitute for circuit-based ILEC BDS is what is known as “best efforts” broadband supplied from cable providers. “Best efforts” are “off the shelf” Internet services which have asymmetrical speeds (higher download speed than upload speed) and lack specific service level guarantees (unlike formal SLAs offered by providers for other BDS technology options).⁵² Despite these limitations, the FCC has found evidence that ILECs are losing BDS customers to cable best-efforts services.⁵³ Small- and medium-size business customers in particular may be willing to trade some level of service or reliability for a lower price.⁵⁴

34. Wireless: As the FCC has recognized, wireless technology is increasingly a viable option for the provision of BDS.⁵⁵ Some businesses are using BDS supplied over fixed wireless technology.⁵⁶ Besides existing wireless services, the promises of upcoming 5G technology are likely to considerably increase the competitive pressure from wireless services on wireline broadband in the BDS marketplace.

⁵⁰ FCC BDS Report and Order, ¶ 29.

⁵¹ FCC BDS Report and Order, ¶ 27.

⁵² FCC BDS Report and Order, ¶ 30.

⁵³ FCC BDS Report and Order, ¶ 31.

⁵⁴ FCC BDS Report and Order, ¶ 31.

⁵⁵ FCC BDS Report and Order, ¶ 38.

⁵⁶ FCC BDS Report and Order, ¶ 37.

35. As a result of the significant competition that has developed in the BDS marketplace, business data services provided through UNEs by non-ILECs are small and declining. Use of UNEs accounts for a small share of total use of BDS services. Although a precise estimate is difficult to determine, the share was likely much lower than 20 percent in 2013. CLECs account for about half of total BDS revenue, and the share of CLEC BDS revenue attributable to circuit-based technology has been estimated at about 40 percent.⁵⁷ This implies that CLEC revenue from using ILEC resources could account for at most 20 percent of total BDS revenue. But CLEC revenues are derived not only through the sale of services that use UNEs at mandated prices as wholesale inputs, but also from the sale services that use as wholesale inputs other ILEC services that CLECs lease at non-regulated rates.⁵⁸ Thus, 20 percent represents a very conservative upper bound, and the true share is likely much smaller. And, given recent trends of increased rollout of fiber and other BDS technologies, it is likely that the share of total BDS revenue accounted for by services provided by CLECs via ILEC mandated UNEs has declined substantially since 2013.

⁵⁷ In 2015 the FCC initiated a “collection” of data on BDS firms, offerings, and their revenue. See, *e.g.*, FCC BDS Report and Order, note 1. Various parties have published analyses of this data, which includes revenues by type of BDS provider and technology. The FCC has cited some of these studies, noting that CLEC BDS revenue accounted for slightly over half of total BDS revenue in 2013. (FCC BDS Report and Order, ¶ 2.) One study using the FCC’s data found that circuit-based lines accounted for 42 percent of CLEC BDS revenue. (Marc Rysman, “Empirics of Business Data Services,” White Paper, April 2016 at 7, *available at* <https://docs.fcc.gov/public/attachments/DOC-340040A6.pdf>.)

⁵⁸ See, *e.g.*, Marc Rysman, “Empirics of Business Data Services,” White Paper, April 2016 at 7, *available at* <https://docs.fcc.gov/public/attachments/DOC-340040A6.pdf>.

C. Business voice services

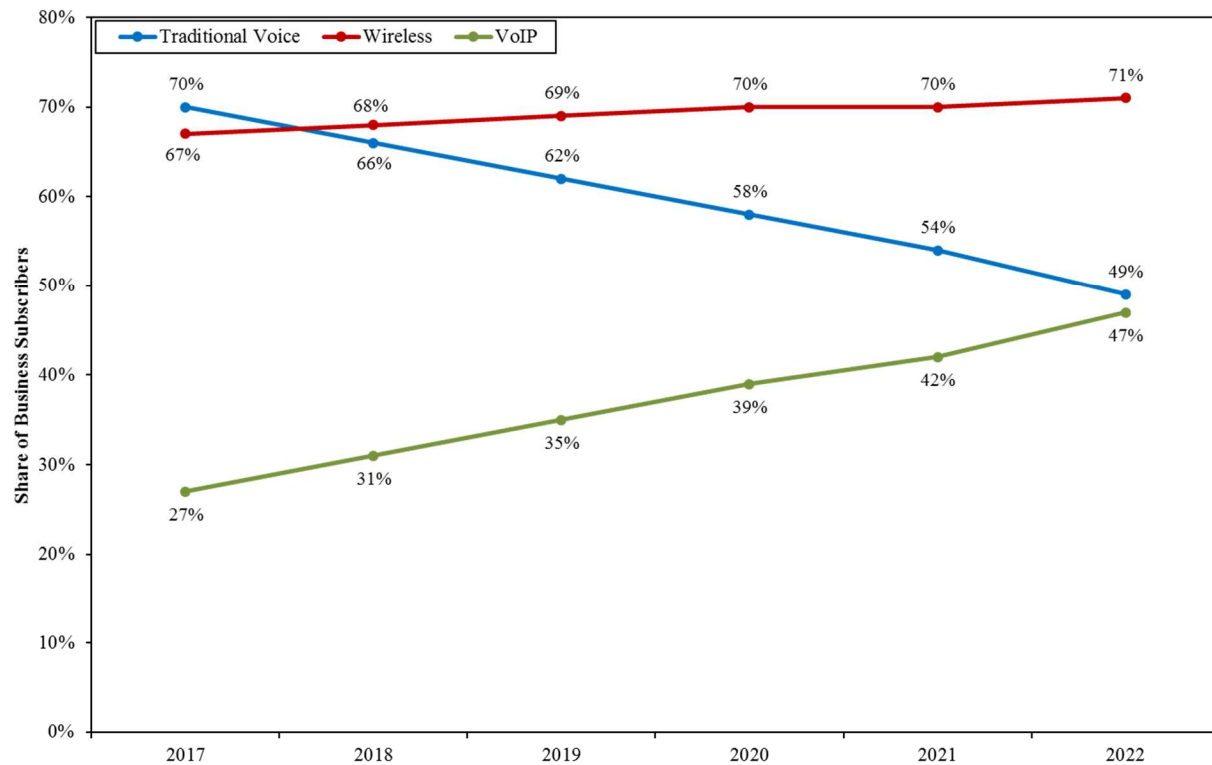
36. Businesses also are increasingly adopting non-ILEC *voice* services. In particular, businesses have adopted VoIP and wireless voice technology as they move away from legacy ILEC voice service.⁵⁹ In the future, two-thirds of organizations plan to migrate employees from traditional voice service to either VoIP or wireless technologies.⁶⁰ It is projected that the share of business subscribers who use traditional voice service will decrease from 70 percent to 49 percent by 2022 and that the share using VoIP (potentially along with other voice technologies) will increase from 27 percent to 47 percent, as shown in Figure 7 below.⁶¹

⁵⁹ Businesses currently use a mix of voice services, with over 80% of respondents in a recent IDC survey indicating they use traditional voice, VoIP, wireless, or some combination of the three services. (Amy Lind, “Enterprise Voice Transformation: Migration from TDM to IP,” IDC, February 2018 at 3, *available at* <https://www.business.att.com/content/productbrochures/voice-and-collaborate-enterprise-voice-transformation-product-brief.pdf>.)

⁶⁰ Amy Lind, “Enterprise Voice Transformation: Migration from TDM to IP,” IDC, February 2018 at 5, *available at* <https://www.business.att.com/content/productbrochures/voice-and-collaborate-enterprise-voice-transformation-product-brief.pdf>.

⁶¹ Amy Lind, “Enterprise Voice Transformation: Migration from TDM to IP,” IDC, February 2018 at 9, *available at* <https://www.business.att.com/content/productbrochures/voice-and-collaborate-enterprise-voice-transformation-product-brief.pdf>.

Figure 7: Forecasted Share of Business Customers Using Voice Technologies, 2018-2022



Notes: Share of business subscribers across all mix types of service (e.g., Traditional Voice only, Traditional voice and VoIP, etc.).
Sources: IDC - Enterprise Voice Transformation: Migration from TDM to IP - page 10.

37. In sum, competitive developments over the past two decades have eviscerated the need for mandated UNEs to ensure a competitive marketplace. Under current competitive conditions, there can be no reasonable argument that ILECs possess material monopoly power in either the consumer or BDS marketplaces, or that unbundling mandates are necessary to protect competition and consumers.

IV. Continued Enforcement of Unbundling Requirements Will Slow Migration to Next-Generation Services and Diminish Investment Incentives

38. While market developments have eliminated any competitive benefits of unbundling mandates, the economic inefficiencies from such regulations remain. Existing mandates have and will continue to have adverse economic consequences. As discussed in this section,

marketplace distortions created by unbundling mandates can (1) slow the migration to next-generation services and (2) undermine incentives for both ILECs and competitive carriers to invest in new facilities and in deploying next-generation technologies.

A. Economic literature on the effect of unbundling mandates on the investment incentives of ILECs and competitive carriers

39. An extensive economics literature shows that the forced sharing of facilities at below-market rates reduces incentives for investment and innovation, to the detriment of consumers and dynamic efficiency. Unbundling requirements diminish incentives to invest in facilities both by ILECs and competitive carriers.⁶²

40. Disincentives to invest by ILECs: Mandated unbundling at below-market rates decreases an ILEC's incentives to invest in the upgrade and maintenance of existing facilities, and to invest in new facilities, by reducing expected returns. A firm's decision to invest in new facilities and innovations depends on the expected rate of return on such investments. Firms weigh the probability of earning excess return from an investment against the risk of an investment loss. Specifically, firms generally will invest if a project has a positive net present value.⁶³ Basic investment theory shows that a reduction in expected returns or increased risks has the effect of reducing the net present value of an investment project, and therefore diminishing investment activity. Regulation can reduce the net present value of an investment project either by (1)

⁶² See, e.g., Thomas M. Jorde, J. Gregory Sidak, and David J. Teece, "Innovation, Investment, and Unbundling," 17 *Yale J. on Reg.* 1 (2000); Robert W. Crandall, Allan T. Ingraham, and Hal J. Singer, "Do Unbundling Policies Discourage CLEC Facilities-Based Investment?" 4(1) *The B.E. J. of Econ. Analysis & Policy* 1 (2004); Robert S. Pindyck, "Mandatory Unbundling and Irreversible Investments in Telecom Networks," NBER Working Paper No. 10287, Cambridge, MA (2004).

⁶³ Equivalently, firms will generally invest if the expected rate of return on that investment exceeds an appropriate measure of the firm's weighted average cost of capital (WACC).

decreasing the expected returns or (2) increasing risk, which raises the required rate of return due to a greater “risk premium” on investments.

41. Requirements that firms share innovations or other investment assets, such as the unbundling requirements of the 1996 Act, reduce incentives to invest by reducing expected returns of such investments. Requiring ILECs to grant their competitors unbundled access to their facilities at below-market rates reduces expected returns, and thereby reduces the ILEC’s incentives to invest in those facilities. For instance, an ILEC’s incentives to invest in technologies that lower marginal costs are vastly diminished if competitors also can take advantage of, or “free-ride” on, such lower costs as a result of regulatory mandates. Investments in telecommunication services, which inherently entail large initial sunk costs and long-term benefits (*i.e.*, expected revenue streams), are highly sensitive to unbundling regulation. Small decreases in expected revenue streams or increases in risk can yield a significant reduction in the net present value of an investment project.

42. Disincentives to invest by competitive carriers: Unbundling mandates also discourage competitive carriers from making their own facilities-based investments, instead taking advantage of ILEC’s UNEs.⁶⁴ A competitive carrier will forgo investing in its own facilities if the net present value of facilities-based investment is less than the net present value of using UNEs. Mandated UNEs at below-market rates induce competitive carriers to defer facilities-based investments by increasing the profitability of using UNEs relative to investing in facilities.

⁶⁴ See, *e.g.*, Thomas M. Jorde, J. Gregory Sidak, and David J. Teece, “Innovation, Investment, and Unbundling,” 17 *Yale J. on Reg.* 1 (2000); Robert W. Crandall, Allan T. Ingraham, and Hal J. Singer, “Do Unbundling Policies Discourage CLEC Facilities-Based Investment?” 4(1) *The B.E. J. of Econ. Analysis & Policy* 1 (2004).

43. Investments in the telecommunications industry are inherently risky, as significant uncertainty generally exists regarding the effectiveness of a new technology, consumer demand for and adoption of a particular service, and competition, among other things. Mandatory unbundling allows a competitive carrier to defer investments until that uncertainty is diminished or resolved, as new information becomes available.⁶⁵ Competitive carriers can wait to see whether an ILEC's investments turn out to be successful. Mandatory unbundling essentially gives the competitive carrier an "option" to invest in a particular service or technology if it proves successful, and not invest if it proves unsuccessful. Mandatory unbundling therefore gives a competitive carrier the incentive to defer making facilities-based investments by "free-riding" on the risky investments of an ILEC.

44. Empirical studies have supported the fact that mandated unbundling at below-market rates decreases facilities-based investments. For instance, one study finds that facilities-based growth in local phone lines was slower in states where the cost of UNEs was lower relative to the cost of facilities-based investment which, according to the authors, "suggests that unbundling decreases facilities-based competition in the short term."⁶⁶

45. Proponents of mandatory unbundling have argued that UNEs enhance facilities-based investments because they serve as a transitional way for competitive carriers to build a customer base and thereby overcome the entry barriers from sunk costs of building their own facilities by

⁶⁵ See, e.g., Robert S. Pindyck, "Mandatory Unbundling and Irreversible Investments in Telecom Networks," NBER Working Paper No. 10287, Cambridge, MA (2004).

⁶⁶ Robert W. Crandall, Allan T. Ingraham, and Hal J. Singer, "Do Unbundling Policies Discourage CLEC Facilities-Based Investment?" 4(1) *The B.E. J. of Econ. Analysis & Policy* 1, 20 (2004). See also, James Eisner and Dale E. Lehman, "Regulatory Behavior and Competitive Entry," prepared for the 14th Annual Western Conference Center for Research in Regulated Industries, June 28, 2001 ("We find that states with low UNE prices have less facilities-based entry...").

achieving sufficient scale (sometimes known as the “stepping stone” hypothesis).⁶⁷ Also, proponents of mandatory unbundling have argued that competition from competitive carriers offering UNE-based services motivates ILECs to invest.⁶⁸ But whether these hypotheses were valid in the past, such arguments that mandatory UNEs spur innovation no longer apply. ILECs face significant competition, as discussed in Section III above, and mandated UNEs are not necessary to maintain the competitive pressure on ILECs. Cable operators and wireless carriers, for example, offer services using their own infrastructure, generally without leasing network elements from ILECs.

46. Also, UNEs were intended to serve as a transitional provision until “fledgling competitors could develop a customer base and complete the construction of their own networks.”⁶⁹ Given that over two decades have passed since the 1996 Act became law, the premise that UNEs must continue to be available to competitive carriers at below market rates in order for those carriers to develop a customer base before investing in their own facilities-based services no longer makes economic sense. To the extent that such a “stepping stone” hypothesis was valid in the past, competitive carriers would have been able to build a sufficient customer base over the past two decades. And, if some competitive carriers were unable to achieve sufficient scale to justify facilities-based investments, there is no basis that they would be able to do so going forward, particularly given the significant competition and diminished relevance in the marketplace of services provided via UNEs.

⁶⁷ See, e.g., Robert D. Willig, *Investment Is Appropriately Stimulated by TELRIC* (2004) at 3.6.

⁶⁸ *Id.* at 3.5.

⁶⁹ Implementation of the Local Competition Provisions of the Telecommunications Act of 1996, Third Report and Order (released Nov. 5, 1999), ¶ 6.

B. The effect of unbundling mandates on migration to, and investment in, next-generation services

47. Unbundling mandates also slow migration to next-generation services, and diminish incentives to invest in next-generation technologies. Services provided through mandated UNEs persist (although their share is small and declining) because regulated rates are much lower than market-determined commercial rates for equivalent legacy services.⁷⁰ This regulatory subsidy for UNEs distorts the marketplace and slows migration to next-generation services. The economic effects of subsidies are well understood and unambiguous—subsidies distort the marketplace by lowering the cost of some technologies (or to some firms) relative to others. In this context, the subsidies lower the cost of legacy services provided through copper-loop networks relative to next-generation services, such as fiber-based services.

48. The diminished rate of migration to next-generation services is detrimental to consumers because such services offer cost and performance advantages over legacy networks. For instance, next-generation services offer significantly higher speeds relative to legacy services.⁷¹ And, prices for next-generation services are generally lower than for legacy services.⁷²

49. The reduced pace of migration to next generation services also decreases investment incentives. As discussed above, investment incentives are driven by profit opportunities. A higher profit potential leads to greater incentives to invest and innovate. Market distortions that artificially keep consumers on legacy services reduce the incentives of both ILECs and

⁷⁰ For instance, Singer and Caves “estimate [that] regulated UNE rates are on average 59% less than commercial wholesale rates for equivalent legacy services.” (Hal Singer and Kevin Caves, *Assessing the Impact of Forbearance from 251(c)(3) on Consumers, Capital Investment, and Jobs*, May 2018 at 4.)

⁷¹ See, *e.g.*, Hal Singer and Kevin Caves, “Assessing the Impact of Forbearance from 251(c)(3) on Consumers, Capital Investment, and Jobs,” May 2018 at 32.

⁷² *Id.*

competitive providers to invest in next-generation technologies by decreasing the potential profit opportunities from investing in such technologies.

50. The subsidy provided by mandated UNEs at below-market rates not only affects ILEC investment, but also can depress investments by competitive carriers. Competitive carriers may respond differently to the absence of mandated UNEs at below-market rates. Some competitive providers may invest in facilities-based, next-generation services, rather than maintaining customers on subsidized legacy services. Unbundling requirements induce competitive carriers to defer facilities-based investments by increasing the profitability of offering services through UNEs at subsidized, below-market rates, relative to the capital investments necessary to provide facilities-based, next-generation services.

51. Other competitive providers would lease special access, Ethernet, or other wholesale services from an ILEC or other competitive carriers at market rates. The subsidies provided by the unbundling mandates artificially distort the relative price between leasing UNEs in providing legacy services, and leasing other wholesale services at market rates. Thus, despite the cost and performance advantages of next-generation services, the subsidy distorts the incentive of competitive carriers in continuing to offer legacy services based on UNEs.

52. Some competitive carriers may continue to offer services based on replacements for legacy UNEs. But ILECs would charge competitive carriers wholesale rates that more accurately reflect market rates. Competitive carriers would pass through some portion of this cost increase to end customers in higher prices for services, which would have the effect of accelerating subscribers switching to next-generation services by correcting the relative price

between UNE-based services and next-generation services.⁷³ Other competitive carriers may discontinue offering services based on UNEs, and simply lose customers to next-generation services, which also would accelerate migration.

53. A key question is why customers currently using legacy services would be better off if they were induced to migrate to next-generation services through forbearance from the unbundling mandates—either due to higher prices for legacy services or through the discontinuance of UNE-based services by competitive carriers. And, relatedly, why those customers do not switch to next-generation services given their lower prices and/or higher quality compared to legacy services? The answer is that communications services are characterized by significant customer “stickiness,” as consumers often delay switching to superior or lower-priced services even when those services are available. The subsidy provided to the legacy services of competitive providers exacerbates this consumer inertia, and further slows the migration to next-generation services. Forbearance would encourage many of these customers to switch to next-generation services by eliminating the market distortion created by mandated UNEs at below-market rates.

54. Thus, customer migration to next generation services would accelerate if forbearance were granted. The migration of customers from legacy systems that have been subsidized to next-generation technologies would increase potential profits for next-generation technologies and thereby may enhance the incentives of ILECs and other providers of facilities-based next-

⁷³ Currently, mandated UNEs create profits for competitive carriers, which provide services based on subsidized UNEs. But these profits do not create material incentives for competitive carriers to invest. First, profits generated from UNE-based legacy services do not create investment incentives, compared to potential profit opportunities for next-generation services. Second, competitive carriers generally have much lower propensity to invest compared to ILECS. (See, *e.g.*, Hal Singer and Kevin Caves, “Assessing the Impact of Forbearance from 251(c)(3) on Consumers, Capital Investment, and Jobs,” May 2018 at 18.)

generation services to invest. The higher profit potential would result from (1) accelerated customer migration to next-generation services and (2) from leasing special access, Ethernet, or other wholesale services to competitive carriers at market rates.

V. Conclusions

55. Market developments over the past two decades have rendered mandated UNEs unnecessary and harmful to consumers and dynamic efficiency. Given the dramatic developments and innovation in the telecommunications industry, regulations that were put in place to “jumpstart” competition can no longer be justified. Granting forbearance from §251 regulation will have a positive impact on competition and innovation, and will accelerate the migration from UNE-based legacy services to next-generation services.

I declare under penalty of perjury that the foregoing is true and correct.

A handwritten signature in blue ink, appearing to read "Andres Lerner", is positioned above a horizontal line.

Andres V. Lerner
August 6, 2018